BY ORDER OF THE SECRETARY OF THE AIR FORCE

AIR FORCE TACTICS, TECHNIQUES, AND PROCEDURES 3-42.5

19 JULY 2001

Tactical Doctrine

AEROMEDICAL EVACUATION (AE)

NOTICE: This publication is available digitally on the AFDPO WWW site at: **http://afpubs.hq.af.mil.**

OPR: HQ USAF/SG-Doctrine (Major Stephanie D. Smith)

Certified by: HQ AFDC/CC
(Maj Gen Lance L. Smith)
Pages: 57
Distribution: F

PURPOSE: The Air Force Tactics, Techniques, and Procedures (AFTTP) 3-42 series of publications is the primary reference for medical combat support capability. This document, AFTTP 3-42.5, provides TTP for aeromedical evacuation (AE) of patients across the range of military operations, from steady state/peacetime engagements through war-winning operations. Since AE is only one component of the larger Department of Defense (DOD) patient movement enterprise, the guidance is designed to assist planners in the successful integration of AE into the various modes of patient movement conveyance and the specific patient movement systems.

APPLICATION: This publication applies to all Air Force military and civilian personnel (including Air Force Reserve Command [AFRC] and Air National Guard [ANG] units and members). The doctrine in this document is authoritative but not directive.

SCOPE: The Air Force aeromedical evacuation system provides a critical patient movement capability that cuts across traditional Service lines. Since World War II, the preponderance of AE patients generated during wars and contingency operations have come from Army and Marine Corps ground combat units. Therefore, it is critically important that the AE system integrates well with the medical components of all Services, not just those of the Air Force. Moreover, during the past decade, it has become increasingly important that the Air Force AE system continue to develop its capability to integrate with medical components of our Nation's allies as well.

Page

FIGURES

Page

Chapter 1

AEROMEDICAL EVACUATION (AE)

1.1. AE Mission.

1.1.1. The Air Force aeromedical evacuation mission is to rapidly evacuate patients under the supervision of aeromedical evacuation crewmembers (AECMs) by fixed-wing aircraft. Approximately 87 per cent of the total Air Force AE capability resides in the Air Reserve Component (ARC).

1.1.2. The highly lethal potential of today's battlefield, the reduced medical footprint, and the "evacuate and replace" philosophy, have made the AE mission even more critical than in the past. Moreover, the evacuation of patients by air to facilities offering required levels of care have to compete with other critical wartime airlift requirements.

1.1.3. AE can operate as far forward as fixed-wing aircraft are able to conduct air/land operations. The evacuation can be from forward airfields in the combat zone to points of definitive medical care also within the combat zone (intratheater); from the combat zone to medical care in the communications zone (COMMZ) (intratheater or intertheater, depending on the theater); or from the COMMZ to either an intermediate supporting theater or on to the continental United States (CONUS) (intertheater). AE can significantly improve casualty recovery rates by providing rapid transportation with appropriate en route care of the sick and wounded to more advanced medical facilities for treatment.

1.2. AE Concepts. Air Force AE delivers movement capability while maintaining a broad spectrum of medical capabilities for patients. The Air Force AE system provides: (a) control of casualty movement by air transport; (b) AE personnel and equipment for in-flight supportive patient care and ground support operations; (c) Critical Care Air Transport Teams (CCATTs) to monitor and manage patients requiring intensive care; (d) facilities and personnel on or in the vicinity of airheads and air bases for the administrative processing, staging, and limited medical care of casualties entering or transiting through the AE system; (e) command and control of all theater AE forces and AE operations; and (f) an organic communication network capability between/among en route medical facilities and airlift command and control (C2) agencies.

1.3. Historical Background.

1.3.1. During World War II, both European- and Pacific-based American Armed Forces had their initial large-scale experiences with wartime AE. Large numbers of casualties occurred in geographic regions located far from modern facilities, necessitating the use of airlift to transport patients to these medical facilities. In 1949, the Secretary of Defense gave the US Air Force the responsibility for air transport of military patients. In 1975, the Air Force passed this responsibility to the Military Airlift Command and the 375th Aeromedical Airlift Wing (AAW). On 1 October 1990, the 375 AAW at Scott Air Force Base (AFB), Illinois, was inactivated and the active duty AE units were assigned to their respective host bases and corresponding major commands (MAJCOMs).

1.3.2. A new era began on 1 June 1992 when Military Airlift Command, Strategic Air Command, and Tactical Air Command were inactivated. Air Combat Command (ACC) and Air Mobility Command (AMC) were formed from elements of those three organizations. Shortly afterward, AMC divested itself of infrastructure and forces not directly related to global reach. The C-130 airlift squadron and aeromedical evacuation squadrons (AES) at Rhein-Main Air Base, Germany, were transferred to United States Air Forces in Europe (USAFE) and similar squadrons at Yokota Air Base, Japan, were transferred to Pacific Air Forces (PACAF). The majority of active and Air Reserve Component (ARC) C-130 airlift squadrons, as well as the active duty AES at Pope AFB, North Carolina, and the 19 gained AESs from the ARC, were transferred to ACC in order to align all theater (combat) support under one command. However, in 1997 they were transferred back to AMC.

1.3.3. During Operation JUST CAUSE and later in Operation DESERT STORM, the philosophy of flying only stable patients in the AE system evolved to "shock-stabilize and evacuate" (securing the airway, controlling hemorrhage, treating shock, and immobilizing fractures). In conjunction with this new philosophy, the concept of the CCATT was developed. The 59th Medical Wing (Wilford Hall USAF Medical Center) was used as the test bed for this evolutionary AE capability. By May 2000, CCATTs were integrated with AE as a vital piece of the mission. Finally, as the availability of airlift decreased in the late 1990s, it became apparent that all medical and aeromedical evacuation unit type codes (UTCs) would have to become more light, lean, and life saving.

1.4. Threat. As *Joint Vision 2020* suggests, the next two decades will present many unknowns. The US will face a wide range of challenges and opportunities. The nature of the threats could vary considerably within the spectrum of operations. Threats are predicted to be asymmetrical and include, but are not limited to, terrorism, information warfare (IW), precision-guided munitions, enemy special forces activities, biological and chemical weapons, radiological toxic industrial materials (TIM), and others. The threat during a major theater war (MTW) includes heightened and bolder activities, plus the additional threat of nuclear weapons. Through its new *Vision 2020*, the Air Force will rely upon global vigilance, reach, and power to provide balanced aerospace capabilities key to meeting national security objectives and to realizing the full spectrum dominance envisioned by *Joint Vision 2020*.

1.5. Force Health Protection.

1.5.1. The concept of force health protection (FHP) represents the set of health programs that protect America's fighting forces against the threats described above. The FHP construct is based upon three interrelated pillars—a healthy and fit force, casualty prevention, and casualty care and management. The casualty care and management pillar supports the warfighting commanders of all Services through the provision of essential care in the theater, followed by rapid aeromedical evacuation to definitive treatment without sacrificing quality of care.

1.5.2. The casualty care and management pillar encompasses five combat care capabilities: first responder, forward resuscitative surgery, theater hospitalization, en route care, and care outside the theater. The first three represent increasing medical capabilities, from initial stabilization near the point of injury, through forward resuscitative surgical procedures to

achieve clinical stability, to more sophisticated levels of medical capability in theater hospitals. Finally, en route patient care, which encompasses AE, involves care of injured and ill Service members during movement between the levels of care (described in Chapter 3). The goal of en route care is to sustain the level of care initiated prior to evacuation without interruption and to prevent patients' conditions from deteriorating during evacuation.

1.5.3. The FHP concept reflects a doctrinal shift in the care and management of casualties by focusing on delivery of essential care in theater and evacuation to definitive care capabilities outside the theater of operations as soon as practical. To support the evolving FHP concepts, medical assets, including AE components, must be smaller, rapidly deployable, more effective, and technologically advanced.

1.5.4. It is imperative that first responder, resuscitative surgery, and theater hospitalization medical personnel ensure patients are properly prepared for evacuation to the fullest extent that clinical capabilities, patient load, and operational scenarios allow. This must include anticipating and addressing problems that may develop during movement. AECMs continue the originating provider's (includes: physician, physician assistant, and independent duty medical technician as well as special forces personnel) plan of care, and they attempt to sustain without interruption the level of care initiated prior to evacuation and to prevent the patient's condition from deteriorating during evacuation. AECMs may have additional support from CCATTs or other medical attendants.

1.5.5. Changes in technology and its employment have enabled a dramatic expansion of en route care capabilities. However, achieving the levels of care needed to support anticipated future casualty movement requirements will need significant enhancements in medical equipment; in clinical capability using any available and appropriate AE transportation platform; in patient management and regulating systems; and in clinical and operational training.

Chapter 2

COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTERS (C4)

2.1. Introduction.

2.1.1. Command and control functions exercised over AE missions are consistent with those for all air mobility missions and are handled in accordance with the C2 structures described in Joint Publication 3-17, *Joint Tactics, Techniques, and Procedures for Air Mobility Operations*; AFDD 2, *Organization and Employment of Aerospace Power*; and AFDD 2-6, *Air Mobility Operations*.

2.1.2. Patient evacuation from point of injury to initial treatment at a health care facility is the responsibility of each Service component. The staff of the component should provide technical assistance for all functions of the patient movement system, including operational guidance, intelligence, medical direction, logistics, and communications support. Patient movement is generally coordinated within an area of responsibility (AOR) by a joint patient movement requirements center (PMRC), normally located in the joint air operations center (JAOC).

2.1.3. Evacuation of patients between points within the theater is referred to as intratheater evacuation, while evacuation of patients between originating theater and points outside the theater, to include United States and other theaters, is referred to as intertheater evacuation. In both cases, en route care is normally provided by trained AECMs (qualified flight nurses [FN] and AE technicians).

2.1.4. Successful AE missions require close coordination and communication between all involved agencies. This chapter outlines and defines roles, responsibilities, and interactions within the air mobility C4 structure to ensure the Armed Forces have an effective and efficient AE system.

2.2. Integration. Aeromedical evacuation involves the coordinated use of intratheater and intertheater evacuation assets. Centralized control and decentralized execution of air mobility missions are the keys to effective and efficient air mobility operations. Centralized control allows commanders to focus on those priorities that lead to victory, while decentralized execution fosters initiative, situational responsiveness, and tactical flexibility. Although it is not necessary for a single organization to centrally control all air mobility forces, commanders should envision air mobility as a global system capable of simultaneously performing both intratheater and intertheater missions. Separate but integrated command structures exercise centralized control over CONUS-assigned and theater-assigned/attached air mobility forces. This arrangement ensures a smooth interaction of inter and intratheater forces. The United States Transportation Command (USTRANSCOM) provides a single point of contact for global patient movement policy.

2.3. Coordination.

2.3.1. Patient evacuation may be conducted in conjunction with combat operations, troop movements, or logistics movements within a joint operations area (JOA). In such situations, joint force commanders (JFC) should integrate and coordinate the use of evacuation resources towards the common purpose of reducing mortality while maintaining medical treatment. It is therefore critical that each Service component properly plan to operate its portion of the overall patient movement system.

2.3.2. AE is not the only mechanism for movement of patients by air. Casualty evacuation (CASEVAC), a term used by nonmedical units of all Services, refers to the movement of unregulated casualties aboard nonmedical vehicles or aircraft. Medical evacuation (MEDEVAC), on the other hand, traditionally refers to US Army, Navy, Marine Corps, or Coast Guard patient movement using predesignated tactical or logistic aircraft temporarily equipped and staffed for en route care. MEDEVAC has generally implied the use of rotary-wing aircraft with medical attendants, rather than trained AECMs.

2.4. Command and Control (C2). Effective support of each geographic CINC's mobility requirements demands theater and CONUS-based forces form a global partnership. This partnership must operate as an integrated force with common planning, tasking, scheduling, and C2 systems. A critical element of this partnership is the capability to link centralized airlift control agencies such as the USTRANSCOM Mobility Control Center (MCC); the AMC Tanker/Airlift Control Center (TACC); the theater Air Mobility Operations Control Center (AMOCC) or theater equivalent; and when a joint task force is created, the JAOC. These air mobility partners exercise centralized control to ensure the JFC is supported with responsive, capable, and seamless air mobility.

2.5. Medical Direction and Operational C2. An airlift control center provides C2 of AE missions for operational issues (airframe, crews, equipment) and the PMRC provides medical direction for clinical issues. Should a patient's condition change, early notification of the applicable PMRC will provide clinical expertise and medical consultation and oversight.

2.5.1. Medical Direction. All medical aspects of patient movement management in the AE system (e.g., mission diversions for medical reasons, nonmedical diversions that affect patient management, etc.) should be referred to the supporting PMRC. When medical requirements warrant changes to a specific AE mission, those changes will be coordinated through the AE cell within the appropriate airlift control center (TACC, AMOCC, or aerospace operations center [AOC]).

2.5.2. Operational C2.

2.5.2.1. Steady-state/Peacetime. C2 of AE assets, to include tasking authority for AE and mobility forces, resides with the normal C2 structure for that component. Decisions that affect patient medical care or destination medical facilities will take place with the advice and coordination of the PMRCs. The TACC or AMOCC, or theater equivalent, provides C2 for air mobility assets used to accomplish AE missions within their

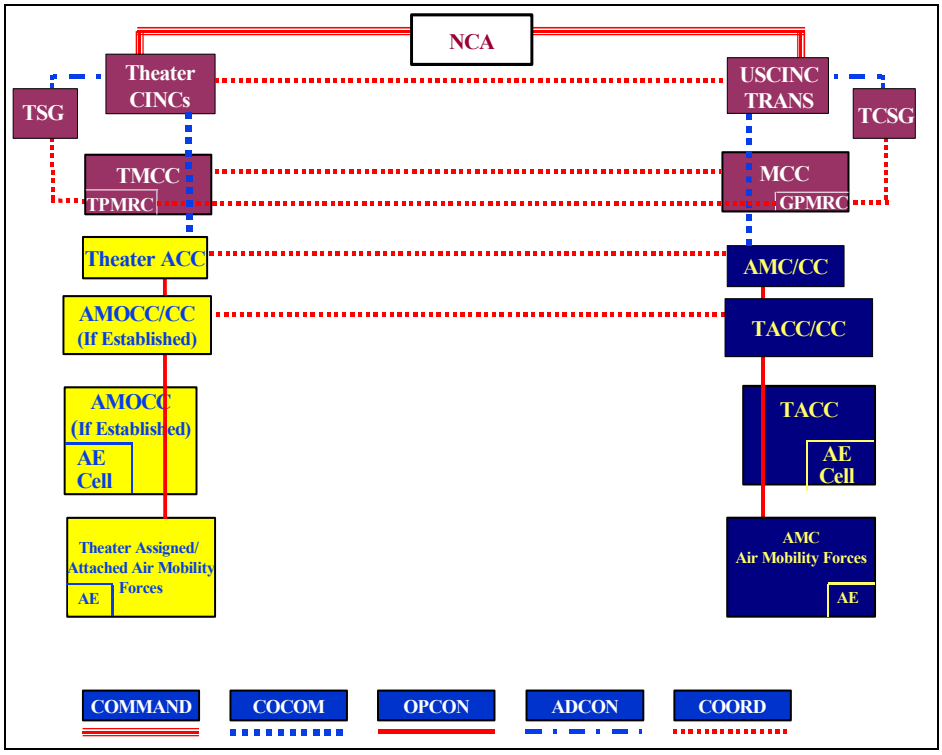
respective areas of operation. AE cells should be established within each of those organizations to provide the critical link between C2 and the PMRCs.

2.5.2.2. Contingency. Theater AE forces deployed to support joint, coalition, or Aerospace Expeditionary Force (AEF) operations will be defined in the warning/ execution/operations order. AE elements deployed in an expeditionary role will normally be organized and presented to the appropriate Joint Force Commander (JFC) as part of a total Aerospace Expeditionary Task Force (AETF). The size and structure of the AETF and the position of AE assets within that AETF will be determined by the size and scope of the operation. The AETF will normally be attached with operational control (OPCON) to the JFC who will, in turn, delegate OPCON to a Commander, Air Force Forces (COMAFFOR). The COMAFFOR is normally the AETF commander and may be dual-hatted as the Joint Force Air Component Commander (JFACC). In addition to OPCON, the COMAFFOR has full administrative control (ADCON) over assigned Air Force forces and specified ADCON over attached Air Force forces[1]. AE assets under the OPCON of the COMAFFOR/JFACC will still need to establish lines of communication with the Joint Force Surgeon (JFS) for medical issues.

2.6. Steady-state/Peacetime AE Structure. (See Figure 2.1.) The Commander in Chief, United States Transportation Command (USCINCTRANS) is responsible for establishing global patient movement policy and guidance and integrating processes and automated information systems to ensure uninterrupted movement of patients through the full spectrum of patient movement systems. Geographic commanders of combatant commands (CINCs) are responsible for intratheater patient movement within their areas of responsibility. They use their designated PMRC to perform patient movement coordination functions, including collaborative patient movement planning, patient movement requirements definition and management, and patient in-transit visibility (ITV).

[1]Air Reserve Component Personnel: Under full mobilization, full ADCON authority goes to the COMAFFOR (AFDD 1). Under less than full mobilization, the COMAFFOR receives specified ADCON, which may include UCMJ authority (AFDD 2), force protection requirements (AFDD 2), and other specific authorities written in G series orders. The ARC retains all other ADCON authorities (AFH 10-416).

Figure 2.1. Steady-state/Peacetime AE Structure



2.6.1. Patient Movement Requirements Centers (PMRCs)—Global, Theater, and Joint. The PMRC is a joint activity that coordinates patient movement. It is the functional merging of joint medical regulating processes, Services' medical regulating processes, and coordination with movement components for patient evacuation. PMRCs are the single responsible agents in their respective theaters or AOR for collaborative patient movement planning, patient movement management, and patient ITV. PMRCs should exist at the joint level as an element of the joint movement center. PMRCs have the authority to ensure lift and bed requirements are communicated to supporting agencies, healthcare facilities, and government agencies within their AOR. Transfer of patient accountability occurs when the patient enters the receiving PMRC's AOR. The PMRC may be joint, reporting to the joint task force surgeon; theater, reporting to the theater surgeon (TSG); or global, reporting to the USTRANSCOM surgeon (TCSG).

2.6.2. Tanker/Airlift Control Center (TACC). The TACC is the AMC direct-reporting unit responsible for tasking and controlling operational missions for all activities involving forces supporting USTRANSCOM's global air mobility mission. TACC functions include current operations, C2, logistics operations, aerial port operations, aeromedical evacuation, flight planning, diplomatic clearances, weather, and intelligence.

2.6.3. Air Mobility Operations Control Center (AMOCC). The AMOCC, or theater equivalent, is each theater's single C2 focal point for intratheater air mobility operations external to a joint task force (JTF). The AMOCC, or theater equivalent, provides centralized planning, tasking, scheduling, coordination, and C2 for assigned and attached intratheater air mobility forces operating in the geographic CINC's AOR. The AMOCC integrates

intertheater and intratheater air mobility operations to efficiently and effectively accomplish the theater air mobility mission to enhance the goal of seamless global mobility.

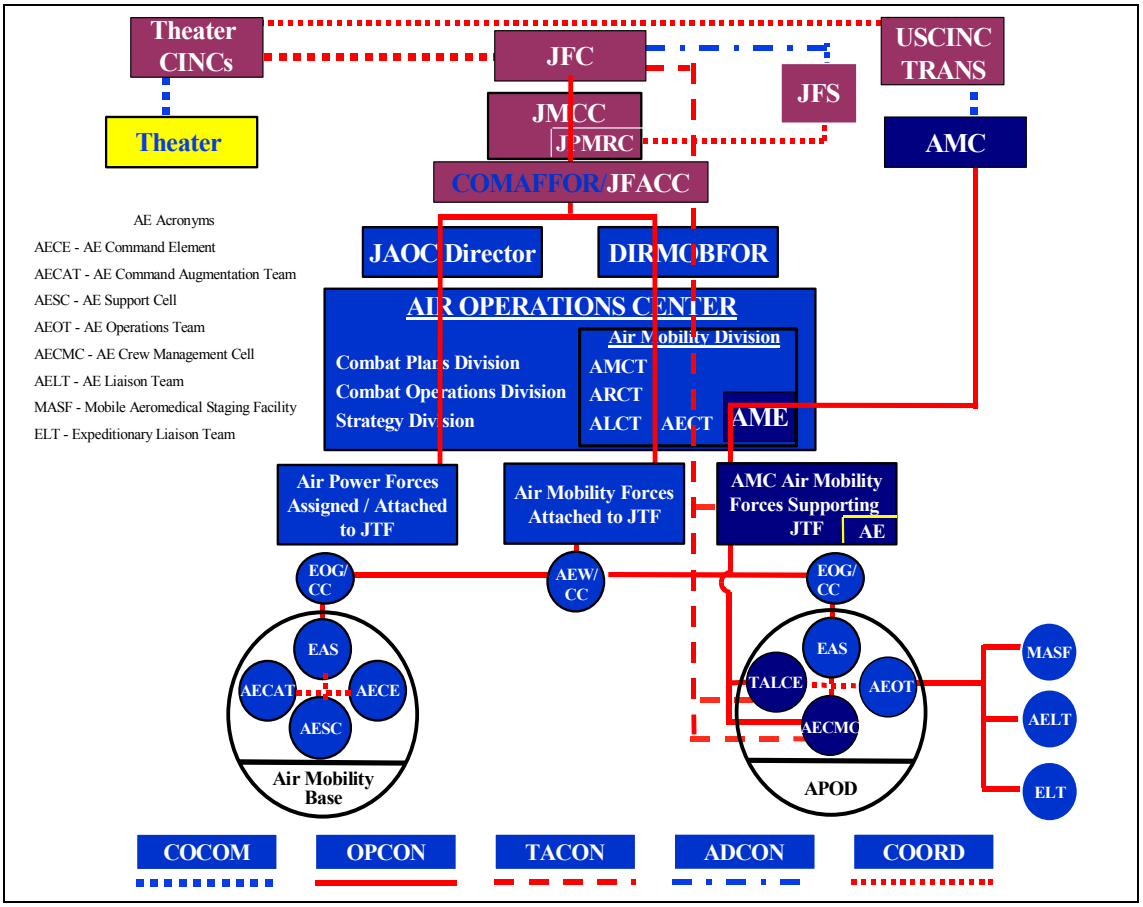
2.6.4. Aeromedical Evacuation Cell. The AE cell is the source of AE operational expertise and execution within the TACC/AMOCC. The AE Cell provides the critical link between command and control, operations, and medical direction. It performs AE operational mission planning and tasking, scheduling, and mission monitoring of airlift and AE assets to support patient movement as well as coordination with the PMRC.

2.7. Contingency AE Structure. (See Figure 2.2.) Deployed expeditionary aerospace forces are organized to ensure unity of command. AE forces deployed will be organized within the constructs of the AETF and will be tailored based on the size and scope of the operation. Intertheater airlift assets normally will not be attached to an AETF but will remain under the ADCON and OPCON of USTRANSCOM, and will be executed through the air mobility element (AME), to include intertheater AE and PMI assets where control of these assets has not been transferred to the theater.

2.7.1. Joint Force Commander (JFC). The JFC is responsible for patient movement in the area of responsibility. The JFC shall establish and maintain a joint PMRC to perform the PMRC functions. JFCs below the geographic combatant commander level exercise OPCON or tactical control (TACON) over assigned and attached forces.

2.7.2. Joint Force Surgeon (JFS). The JFS is appointed by the JFC to serve as the theater or JTF special staff officer responsible for establishing, monitoring, or evaluating joint force health service support (HSS), including evacuation of the wounded, injured, or sick. The JFS is responsible for coordinating and integrating HSS within the AOR. The JFS also identifies to the air component AE function the possible requirements for patient fixed-wing airlift based on casualty estimates. The JFS exercises medical functional and professional oversight for all medical assets assigned to the area of operations (AO) and establishes the HSS concept of operations (CONOPS) in coordination with component surgeons.

Figure 2.2. Contingency AE Structure



2.7.3. Joint Force Air Component Commander (JFACC). The JFACC derives authority from the JFC and has the authority to exercise OPCON (normally delegated by the JFC), assign missions, direct coordination among subordinate commanders, and redirect and organize forces to ensure unity of the air component effort in the accomplishment of the overall mission. Patient movement is an important part of the JFC's mission, and the JFACC plays a critical role in successful AE operations. Normally, the COMAFFOR is dual-hatted as the JFACC.

2.7.4. Air Force Forces (AFFOR) Surgeon. The AFFOR surgeon is the designated medical advisor to the COMAFFOR on all Air Force specific health services support resources, including health surveillance, risk assessment, and other force health protection issues. The AFFOR Surgeon does not exercise command authority or direct control over medical forces, but provides a planning, coordination, and oversight role. The AFFOR Surgeon provides professional oversight for deployed Air Force medical units and writes a supporting CONOPS.

2.7.5. Director of Mobility Forces (DIRMOBFOR). The DIRMOBFOR is normally a senior officer who is familiar with the AOR or joint operations area and possesses an extensive background in air mobility operations. The DIRMOBFOR serves as the designated

agent for all air mobility issues in the AOR or JOA, and for other duties assigned. Additionally, the DIRMOBFOR is the COMAFFOR's or JFACC's designated coordinating authority for air mobility with all commands and agencies both internal and external to a joint force, to include the AOC, the air mobility element, the TACC, the joint movement center, and the multinational airlift coordination cell. Finally, the DIRMOBFOR has a responsibility to ensure that AE missions are properly planned and executed.

2.7.6. AE Plans and Strategy Team (AEPST). The AEPST works with the Combat Plans and Operations Divisions within the AOC and provides information concerning AE force laydown, status, and capabilities to the joint force surgeon, the PMRC, and the DIRMOBFOR through the JAOC. The AEPST develops plans and strategies and determines number and location of AE assets needed to support operational requirements. It provides this information to the AECT for execution.

2.7.7. AE Control Team (AECT). Located within the Air Mobility Division (AMD) of the AOC, the AECT facilitates current AE operational planning for the COMAFFOR/JFACC. To assist the COMAFFOR/JFACC in his overall responsibilities, the AECT analyzes patient movement requests (PMRs); coordinates airlift to meet AE requirements; recommends which AE elements to task based upon medical requirements; monitors and reports on current mission execution, and passes mission information to the PMRC.

2.7.8. Chief, AE Liaison Officer (CAELO). The CAELO is the senior member in the AECT or AEPST who possesses extensive experience in AE and is the member of the DIRMOBFOR staff who provides liaison with the joint force surgeon, component surgeons, and alliance medical forces as applicable, and serves as the senior AE representative in theater. This individual is responsible for gathering component medical force laydown plans, casualty estimates, and consulting on AE safety, inflight patient care guidance and regulatory guidance to the DIRMOBFOR, joint/theater surgeon, AEPST, and AECT. CAELO may deploy early to support establishing an AE interface in an operation.

2.8. Aerospace Expeditionary Forces.

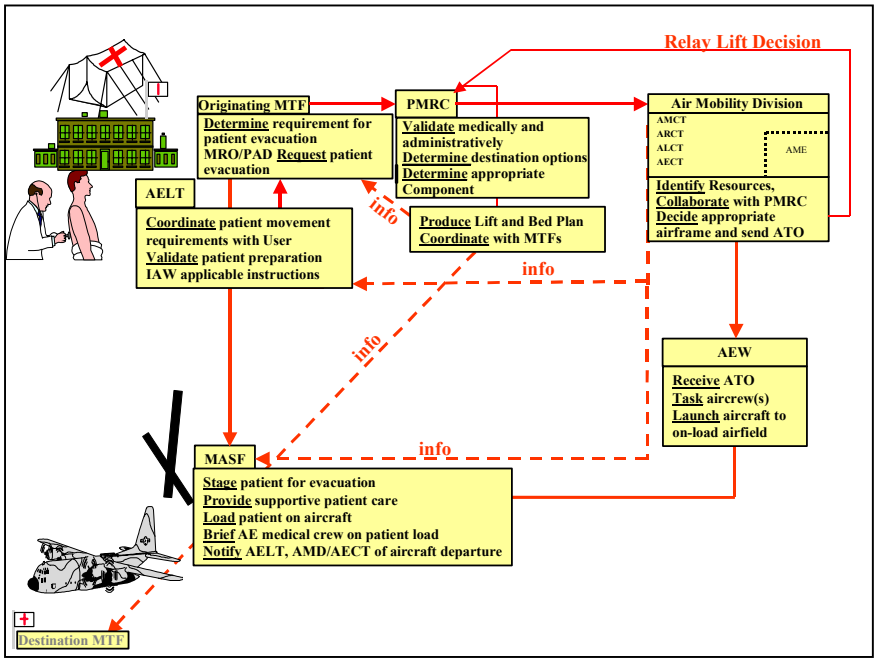
2.8.1. Aerospace Expeditionary Wing (AEW). AE will deploy/employ in war as they exercise in peacetime. When the size and scope of the operation warrants establishing an AEW, AE forces will be aligned as part of the expeditionary operations group (EOG) under the total AEW construct.

2.8.2. Aerospace Expeditionary Group (AEG). When the size and scope of the operation warrants a minimal footprint, a smaller AEG may be deployed instead of the larger AEW. AE elements will then be aligned as part of the expeditionary operations squadron (EOS) under the total AEG construct. Normally an individual squadron or element should not be deployed by itself. When the size and scope of the operation warrants the presentation of a single squadron, it should deploy with provisions for commensurate support and C2 elements and will appear similar to an AEG although some C2 elements may be positioned "over the horizon" rather than deployed forward. AE elements will normally be aligned under an EOS.

2.8.3. Expeditionary Airlift Squadron (EAS). The EAS is the execution portion of the theater AE system (TAES) and is normally aligned as part of the EOG under the AEW construct. Depending upon its location and particular mission, it could include AE elements such as patient staging, AE crews, CCATTs, communications, user component liaison, and supporting elements. The AE command element (AECE) advises supported commanders or other appropriate personnel regarding AE CONOPs, capabilities, requirements, and mission execution.

2.9. Command Relationships With Other C2 Nodes. The AE process is dependent upon reliable, pertinent, and timely communication and coordination between the originating requestor, the appropriate components of the patient movement and AE functions, and the destination medical facility as indicated in Figure 2.3.

Figure 2.3. AE Communication Information Flow



2.9.1. Medical Regulating Officer (MRO). The MRO is an Army or Navy individual in a medical unit responsible for contacting the PMRC with patient movement requirements. The MRO is also responsible for managing patient numbers and bed classifications, determining what resources are available to move the patients, and coordinating the use of those assets. The MRO provides liaison or augmentation to the PMRC.

2.9.2. Patient Administration Director (Clerk/Officer) (PAD). The PAD is the Air Force individual in a medical unit responsible for contacting the PMRC with patient movement requirements. This individual manages patient numbers and bed classifications, determines availability of resources to move the patients, and coordinates the use of those assets. The PAD serves as the liaison between the referring physician and medical staff, the patient, and the PMRC.

2.9.3. AE Liaison. The Air Force AE liaison provides support between the forward user and the AE system and provides operational, clinical, and communications links necessary to prepare patients for flight and initiate fixed-wing evacuation of casualties. Liaisons are generally located at the point of entry into the AE system and/or at field hospitals, Air Force medical facilities, fleet hospitals, medical battalions, marine support elements, and units or other levels of command to ensure a smooth and coordinated patient flow into the AE system.

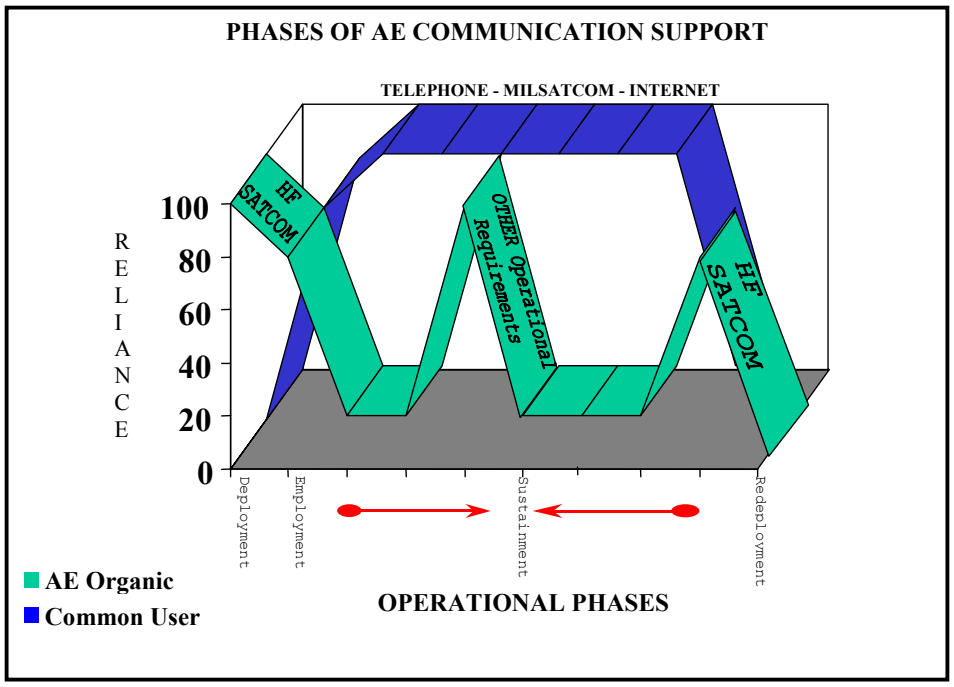
2.10. Communications Requirements. The theater CINC or JFC may provide detailed theater communications plans or assign theater communication management responsibilities to a single-Service component for specific functions during joint patient movement operations. Early identification of a theater's C4 system requirements for AE and HSS connectivity is essential. At a minimum, communications in support of AE must provide reliable, real-time, and when possible, redundant communications within a theater and from theater to CONUS. They must also provide a link between the most forward point where the patient enters the AE system, through each level of care, to the destination health care facility or medical element. The degree of success of AE operations is dependent on the availability of reliable communications over dedicated and interoperable systems. Planners must identify frequencies that are common between Service component support forces assigned a patient movement mission. If no commonality exists, the theater CINC or JFC will develop a theater plan that ensures adequate communications support to all Service components. All frequency requirements for organic equipment must be coordinated with the CINC's plans staff.

2.11. Communications Support.

2.11.1. AE forces are modular by design and can be tailored and deployed to meet theater mission requirements in a multitude of locations. The AE organic C4 infrastructure supports these requirements by providing worldwide deployable, secure and nonsecure, voice and data communications capabilities. The organic AE communications suite allows the greatest flexibility to support the maximum deployment and redeployment options. During the early stages of a contingency, common-user communications capability (i.e., theater deployable communications) is not likely to be available, so there may be complete reliance on organic communications capability. As common-user communications capabilities become available, the reliance upon organic assets is reduced. Planners should consider integral communications capability when building the AE communication requirement. During the sustained phase of the operation full reliance is placed on the common-user communications assets. Organic communications are held for other operational requirements where AE expeditionary elements may be "pulled-out" and pushed further forward to locations not served by a mature theater infrastructure. These organic assets are also maintained for backup capability. During the redeployment phase, as common-user communications capabilities stand down, AE organic assets provide communication support until termination of AE operations. In order to provide AE with command, control, communications, computers, and intelligence (C4I) across the spectrum of contingencies, AE unit type codes (UTCs) require multimode, short- and long-haul communications capabilities. These capabilities must adapt to different theater needs and at the same time increase C4I reliability. All of these capabilities are required to operate with the appropriate degree of

security. Figure 2.4 is a graphical representation of the phases of AE communication support.

Figure 2.4. Phases of AE Communication Support



2.12. AE Communication Modes. Short-range radio communications should be provided by Service component HSS units to ensure communication between medical treatment facilities (MTFs), evacuation vehicles, ships, and aircraft. Theater-based, long-range communications will be provided by high-frequency radios, military satellite communications, defense switching network, defense data network, and automatic digital network communications systems. Satellite communications offering access to commercial telephones or point-to-point systems should be used when available. Secure communications are provided through voice and data security communications equipment.

2.13. Patient In-transit Visibility (ITV). Patient ITV is the process of locating and/or tracking patients through the continuum of medical care and while in the AE system. Service and cultural expectations require that a patient's location be known at all times. Information supporting patient ITV should be reported by any medical facility, staging facility, transport agency, or other agency, through their appropriate C2, to the PMRC for consolidation. The primary focal point for maintenance of ITV is the PMRC.

Chapter 3

OPERATIONS

3.1. AE Across the Range of Military Operations.

3.1.1. The nature of threats impacting the AE system varies considerably within the spectrum of operations. In most contingencies, or civil disaster response actions, airlift will be the preferred means of patient movement from forward locations. Service or civilian modes of transportation may assist with the movement of casualties from a forward location or immediately after an emergent event. Once the military is involved, the unified command is responsible for providing an integrated C2 system for patient movement through decentralized execution and ITV. The unified command PMRCs provide medical regulating services, including clinical validation of patients. The PMRCs communicate patient movement requirements to the AECT (air) or other Service components (ground/sea) that are responsible for executing an evacuation mission.

3.1.2. HQ AMC is charged with the responsibility to operate a common-user, Air Force fixed-wing AE system, procure and execute commercial augmentation, and administer and execute the Civil Reserve Air Fleet (CRAF). AMC has been given the overall responsibility as the AE lead command for the Air Force. AMC manages and operates the intertheater and AE sub-systems, CRAF, and provides AE elements and planning assistance to the theater of operations, in intermediate supporting theaters, or in CONUS. USAFE and PACAF are responsible for their theater-assigned AE units and associated airlift units. During contingencies which exceed theater AE capabilities, AMC will provide mission-specific augmentation forces to support increased theater requirements and will expand or establish the intertheater capability to support movement between theaters of operation, or to CONUS, as required.

3.2. Steady-state/Peacetime Engagement and Crisis Response. Steady-state encompasses the range of day-to-day operations. AE response to steady-state/peacetime operations, including peace making, peace keeping, peace enforcement, and humanitarian assistance, is tailored to the requirements of each operational scenario. AE operations and planning utilize the incremental building block approach as well as military and civilian air movement assets to meet the diverse requirements of these dynamic operations. The peacetime mission is a derivative of training for the wartime requirements of AE. The day-to-day peacetime structure and operational practices should be flexible and able to respond to any steady-state situation.

3.3. Deterrence and Contingency Operations. Medical forces are tailored to meet the HSS support requirements of each type of operation. AE forces are incrementalized and can build from a small liaison team to a full theater AE system (TAES). The initial, expeditionary, AE assets can deploy far forward, are mobile, and support various medical ground units of all services. One key-planning factor that must be evaluated is the potential to move US Government noncombatants, host-nation personnel or allied and/or coalition military personnel for medical care. The respective capabilities and requirements of host-nation and allied and/or coalition medical forces and their ability and/or agreement to support US forces should also be considered.

3.4. War-winning Operations. During war-winning operations, AE entails the full employment of its capability, to include staging capabilities, trained aircrew members, specialty teams, and communications. During wartime, AE includes the movement of military casualties from forward airfields to more capable facilities farther to the rear and, if required, onto definitive care facilities. The AE system may be tasked to transport injured/ill special operations forces, accomplish medical noncombatant evacuation operations (NEO), and/or evacuate injured/ill repatriated US or allied prisoners of war (POW). On certain occasions, the AE system may also be tasked to evacuate injured/ill enemy prisoners of war (EPW). Finally, during war-winning operations AE includes transportation of patients to and redistribution within CONUS.

3.5. Theater Evacuation Policy. The theater evacuation policy is a key planning factor and plays a key role in determining the number of patients to be evacuated (See Chapter 4). In some cases, the specific theater evacuation policies may be located within various pre-developed OPLANs, CONPLANs, and functional plans.

3.6. AE Elements and Assemblages. (See Attachment 2.) Crucial to AE operations is the determination of AE elements, or UTCs, and assemblages that will be employed in a particular operation. (See Figure 3.1.)

3.7. Levels of Care. The health service support (HSS) structure consists of five levels of care. Patients are transported through various modes between these levels. These levels, and the increasing degree of medical capabilities, are defined below. Patient movement forward of Level 3 is a Service responsibility, but if operationally directed, AE may be tasked to go as far forward as there is a suitable airstrip.

3.7.1. Level 1 (L1). First Responder. Level 1 care consists of care rendered at the unit level. It includes self-aid, buddy aid, combat lifesaver skills, examination, and emergency lifesaving measures such as the maintenance of the airway, control of bleeding, prevention and control of shock, splinting or immobilizing fractures, and prevention of further injury. Treatment may include restoration of the airway by invasive procedure; use of intravenous (IV) fluids and antibiotics; and application of splints and bandages. These elements of medical management prepare patients for return to duty (RTD) or for transportation to a higher level of care.

3.7.2. Level 2 (L2). Casualty Collection and Forward Resuscitative Surgery. Level 2 care, at a minimum, includes resuscitation and stabilization and may include advance trauma management, emergency medical procedures, forward resuscitative surgery capability, basic laboratory, limited x-ray, pharmacy, and temporary holding facilities. Patients are treated and returned to duty, or are stabilized for evacuation to an MTF capable of providing a higher level of care.

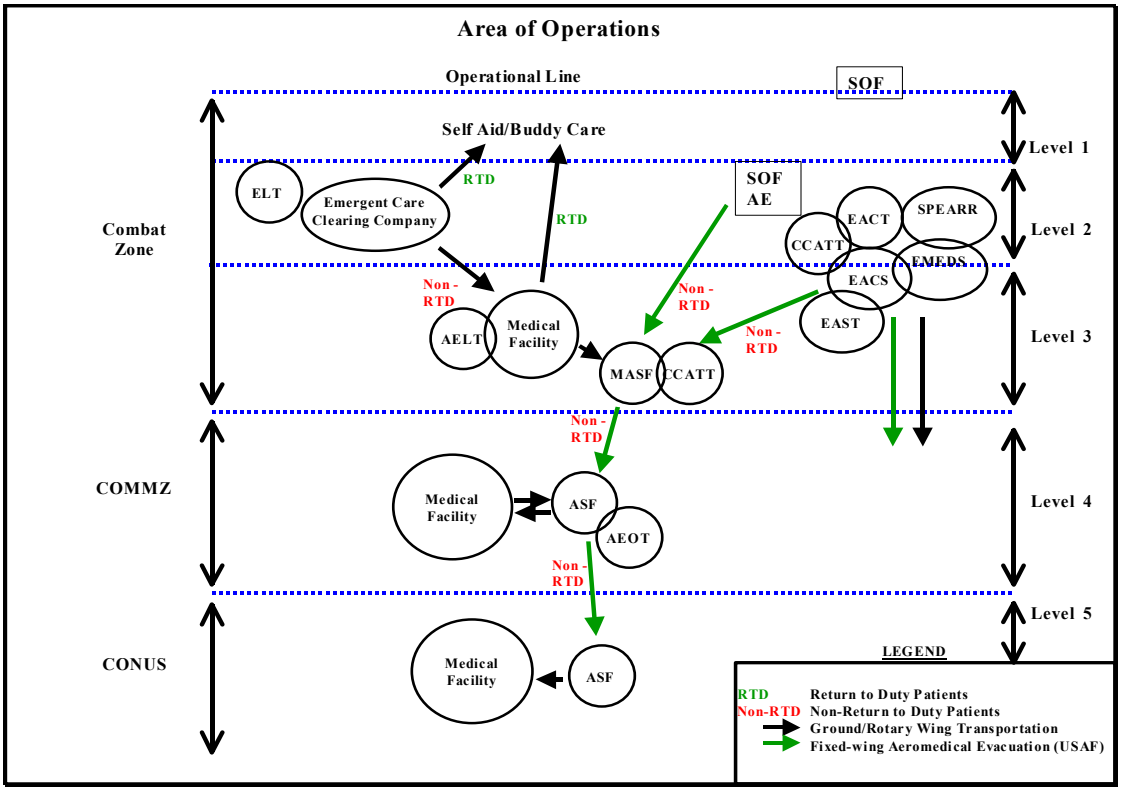
3.7.3. Level 3 (L3). Theater Hospital. Level 3 care includes clinical capabilities normally found in an MTF that is located in a lower-level enemy threat environment. The MTF is staffed and equipped to provide resuscitation, initial wound surgery, and post-operative treatment. This level of care may be the first step toward restoration of functional health, as compared to procedures that stabilize a condition to prolong life. It does not normally have

the crisis aspects of initial resuscitative care and can proceed with greater preparation and deliberation.

3.7.4. Level 4 (L4). Mature Theater Hospital. Level 4 care provides the surgical capabilities found at Level 3, and also provides rehabilitative and recovery therapy for those who can RTD within the theater evacuation policy. This level of care may only be available in mature theaters.

3.7.5. Level 5 (L5). Definitive Care—Large Fixed Facility in CONUS, Outside the CONUS (OCONUS), or CINC-Approved Safe Haven. Level 5 care is definitive, convalescent, restorative, and rehabilitative and is normally provided by military, Department of Veteran Affairs (DVA), CONUS civilian hospitals, and CINC-approved safe havens. This level may include a period of minimal care and increasing physical activity necessary to restore patients to functional health and allow them to RTD or useful and productive life.

Figure 3.1. Example Contingency Patient Evacuation Process
(Refer to Attachment 2 for UTC definitions.)



3.8. AE Mission Priorities. Patient movement priorities for AE missions will be derived from situational factors and/or dependent on individual patient clinical conditions.

3.8.1. Urgent. These patients require emergency evacuation to save life, limb, eyesight, or prevent serious complications of injury or existing medical conditions. For example, psychiatric patients and terminal patients with a short life expectancy are generally not

considered urgent. However, patient movement priorities are situational dependent. Urgent patients are moved as soon as possible.

3.8.2. Priority. Priority patients require prompt medical care not available locally. This precedence is used when the medical condition could deteriorate and the patient cannot wait for routine evacuation. Priority patients are normally moved within 24 hours.

3.8.3. Routine. These patients require medical evacuation, but their condition is not expected to deteriorate significantly. Routine patients are normally moved within 72 hours.

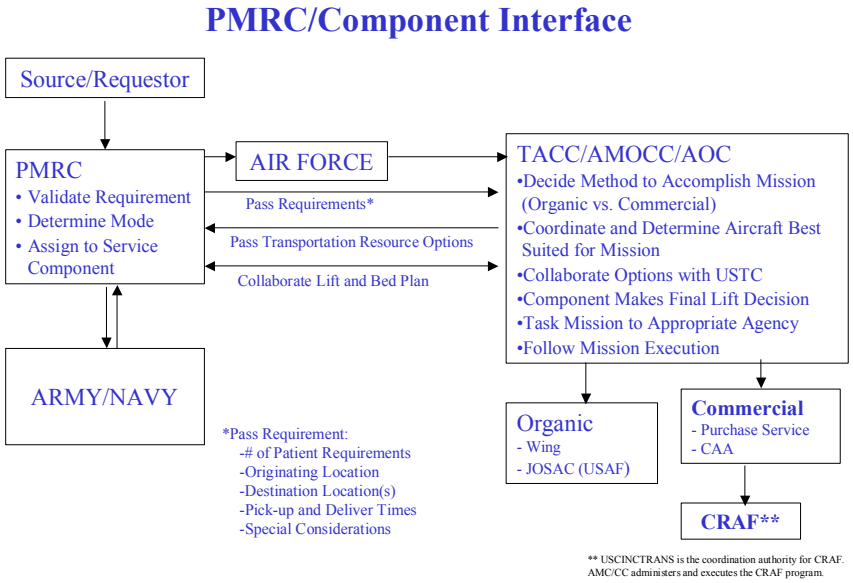
3.9. AE Interface With the Joint Community. A PMRC is responsible for regulating, validating, and coordinating with movement components for patient evacuation. Medical regulating includes the actions and coordination necessary to arrange for the movement of patients through the levels of care. Regulating responsibilities include: validation, coordination, and activities supporting data collection and identification of patient movement requirements. This process matches the patient to a medical treatment facility with the necessary HSS capabilities and bed availability. All patient movement requests (PMR) are validated before being turned over to the Service component for execution. Validating a PMR addresses medical, operational, and administrative issues required to move the patient safely.

3.10. Patient Movement Request (PMR). The patient movement process begins when the health care unit sends a PMR to the servicing PMRC. The PMRC evaluates the request for necessity, acuity, and eligibility; validates the need for movement; identifies a potential destination(s) and determines mode of transportation; and assigns patient and equipment requirements to the appropriate Service component. When the Service component selected is the Air Force, the AE function within the AOC/AMOCC/TACC will receive the requirements, review potential airlift options, collaborate with the PMRC, and determine and select the aircraft best suited for the mission. Final lift decisions will be based on airlift requirements, availability, and priorities (See Figure 3.2).

3.10.1. Steady-state/Peacetime Requirements. For AE support of steady-state or peacetime requirements, the PMRC coordinates with the AE cell in the TACC for intertheater moves or with the appropriate theater's AMOCC, or theater equivalent, for intratheater moves.

3.10.2. Contingency Requirements. For AE support during contingency requirements, the PMRC coordinates with the AECT located in the Air Mobility Division (AMD) of the AOC. The AECT, which is the source of AE operational expertise within the AMD, coordinates AE operational mission planning, tasking, and scheduling of airlift, mission management, and AE assets to support patient movement requirements validated through the PMRC.

Figure 3.2. AE Interface With the Patient Movement Process



3.11. Mission Coordination. For all organic Air Force AE moves, commercial augmentation, or combined missions, the AE cell (for steady-state/peacetime moves) or the AECT (for contingency moves) will coordinate with the appropriate airlift operations center staff to match AE resources with suitable airframes to accomplish the mission. Once the mission has been identified, the AOC/AMOCC/TACC will task wings for airlift, crews, and augmentation assets (equipment and/or specialized medical personnel support). The AE cell or AECT will coordinate mission information with the servicing PMRC. The PMRC will disseminate the information to the originating and destination health care facilities. The AE cell or AECT will flight follow the mission and the PMRC will monitor patient status and receive, consolidate, and maintain reports on patient ITV throughout the mission.

3.12. Communication Systems and Information Requirements. (Detailed in Chapter 2.) The AE organic C4 infrastructure supports AE force requirements by providing worldwide deployable, secure and nonsecure, voice and data communications capabilities. The organic AE C4-suite allows the greatest flexibility to support the maximum deployment and redeployment options. During the early stages of a contingency, AE may rely completely on organic C4 capability. As common-user C4 becomes available, the reliance on organic assets is reduced. During sustained phases of an operation, full reliance is placed on the common-user communications assets and organic communications are used when AE elements are tasked to deploy away from the main infrastructure. During the redeployment phase, as common-user communications capabilities stand down, AE organic assets provide communication support until termination of AE operations.

3.13. Continental US (CONUS) AE. Patients within CONUS and AE missions returning patients from the theater will deliver the patients to those airfields designated as CONUS

reception stations. Once the mission has passed into US airspace, Global Patient Movement Requirements Center (GPMRC) ensures that patients continue to their final destination as appropriate using the most efficient mode of transportation. GPMRC will communicate/coordinate airlift requirements with the AE cell within the TACC. GPMRC will notify receiving medical facilities of aircraft arrival time and types and numbers of patients to be offloaded. The CONUS patient redistribution system and AE requirements are defined in the Integrated CONUS Medical Operations Plan (ICMOP) developed by United States Joint Forces Command.

3.14. Unregulated Casualties. When security or operational conditions exist that would require casualties to be moved immediately, patients may be moved without prior PMRC validation. However, a validating flight surgeon or medical authority will be identified to validate the patients for the airborne environment. In each case, the originating AE component will attempt to alert the AECT of the departure of AE missions with unregulated patients. The AECT will then notify the PMRC.

3.15. Patient Considerations and Preparation for AE. Proper clinical preparation for AE increases the likelihood of successful patient outcome. It is a team effort between the patient, referring physician, nursing staff, AE teams, and the PMRC. Originating physicians and staff, in consultation with local flight medicine personnel, should begin preparatory actions by defining the level of care and the care plan the patient requires en route. Every effort should be made to identify age groups, (e.g. neonates) and clinical disease states that require or could require specialty care en route. Lastly, psychiatric patients must be carefully assessed for their potential for presenting an in-flight risk to flight safety because of their demonstrated behaviors. Furthermore, it can take days between the pick-up time at the originating facility and delivery time at the final patient destination. The patient may remain overnight (RON) at a different medical facility each night. Preparation and thorough documentation are critical to assuring all patients receive quality care throughout the evacuation process.

3.15.1. Patient Stability. Patients validated for transportation by air must be stabilized (secure airway, controlled hemorrhage, treated shock, and immobilized fractures) as much as the situation and resources allow. Potential interventions (i.e., IV or foley catheter) should be initiated prior to flight, if possible. Patients not clinically stable due to severity of wounds or medical condition, limited medical resources, or time constraints may require advanced clinical capability while awaiting transport at an airhead or during flight. At times, the patient's clinical instability may be the very reason that they are being moved by air from a lesser capable facility to another of greater capability. The AE system provides qualified flight nurses and aeromedical evacuation technicians who are augmented by CCATTs or other medical attendants based on patient stability and condition.

3.15.2. Patient Preparation. Once a provider/physician determines a need for AE, the PMRC will regulate the patient to the nearest capable MTF. The physician should consider the care needed both in the air (such as availability of special equipment and cabin altitude) and at interim stops and consult with a validating flight surgeon as required. The physician has responsibility for patient classification, movement precedence, reporting, documentation, and preparation. The originating medical treatment facility will ensure patients are prepared for AE to include required briefings and inspections, such as antihijacking procedures. AE

crews provide the highest level of care capable in an austere in-flight environment. It is therefore imperative that originating medical facilities properly prepare patients for AE.

3.15.3. Management of Patient Weapons. Normally, weapons will be retained by the originating MTF and managed through a pre-identified process. In situations where patients are entered directly into the AE system, it is the responsibility of the AE support element to check the patient and gear for weapons and explosives. During contingency operations, weapons will be returned to the user Service or, in special situations (special operations forces [SOF] activities) weapons will be cleared and transported in accordance with (IAW) aircraft regulations and Geneva Conventions. Explosive and hazardous items found with patients will also be returned to the patient's Service.

3.15.4. Patient Essentials. Patients will be transported with their medical records or evacuation battle tag, valuables, personal effects, and medically essential items IAW established regulations. While in theater, patients should also be transported with their chemical warfare/biological warfare (CW/BW) gear as applicable. **When patient medical supplies and patient movement items (PMI) are coordinated with the AE system in advance, most items can be provided from the AE staging base. Without advance coordination, the originating facility will be responsible for providing these items and should provide a 1-day minimum of supplies, except for patient movement from theater to CONUS and within CONUS where a 3-day minimum should be provided.**

3.15.5. Patient Movement Items (PMI). Medical equipment and supplies required to support patients during evacuation are referred to as PMI. (See Chapter 4.)

3.15.6. En Route Care.

3.15.6.1. En route care requires the use of state-of-the-art, lightweight, medical equipment to ensure the evacuation system is able to successfully transport a patient from the point of injury or illness to definitive care. Configuration and medical equipment interface with the aircraft is of utmost importance and is one of the competencies demonstrated by the AECM. En route care equipment and supplies will be standardized throughout the system and will comply with air-worthiness requirements. This will ensure rapid equipment exchanges and forward re-supply. Information and communication technology will provide ITV for patients and C2 for patient movement.

3.15.6.2. En route care enables movement of stabilized patients. At a minimum, the level of care initiated prior to evacuation should be maintained throughout the transport process. During transport, "stabilized" patients may continue to have physiologic and hemodynamic fluctuations, which necessitate close monitoring and timely intervention.

3.15.7. Documentation. The DD Form 602, *Patient Evacuation Tag*, or AF Form 3899, *Aeromedical Evacuation Patient Record*, should accompany each patient to ensure appropriate care is documented during transport and serve as the legal record of patient care while in the AE system. These documents are primarily used to direct and record en route care. A DD Form 601, *Patient Evacuation Manifest*, should be completed for each AE mission if an automated manifest is unavailable.

3.16. Clinical Considerations. Clinical considerations include standards of care, performance, and practice throughout the continuum of care as well as nursing guidelines. These are all outlined in the *Flight Nursing: Principles and Practice* handbook available in all AE units.

3.16.1. Standards of Care. The standards of care serve as guidelines for all AE clinical practice while providing criteria for monitoring and evaluating the quality and appropriateness of patient care and professional performance. They establish a predetermined level of care focusing on the patient and the level of care the patient can expect to receive from medical personnel. The standards of care in the air are adapted to the aircraft's capabilities and limitations, as well as the in-flight environment.

3.16.2. Standards of Performance. The standards of performance are the expected levels of function of a care provider, based on education, level of experience, and criteria of current position and Air Force specialty code (AFSC) requirements.

3.16.3. Standards of Practice. The standards of practice are the identified levels of accomplishment that focuses on the medical personnel and includes competence, experience, and education. The primary goal of AE medical transport is to meet the perceived, actual, or potential health needs of the patient while maintaining the continuum of care.

3.16.4. Continuum of Care. The continuum of care is the concept of matching an individual's ongoing needs with the appropriate level and type of medical, psychological, health, or social service within an organization and across multiple organizations.

3.16.5. Nursing Care Guidelines. AECMs must ensure that every effort is made to provide continuity of care for each patient. The medical crew director (MCD) and charge medical technician (CMT) will instruct, supervise, and assist the other AECMs while they perform patient care.

3.17. Physician Roles and Responsibilities. The following contains guidance and instructions for DOD and DVA physicians and health care providers on the proper procedures to follow when validating and preparing patients for AE. Further roles and responsibilities are outlined in AFJI 41-306, *Physician's Roles and Responsibilities in Aeromedical Evacuation.*

3.17.1. Referring Physician Responsibilities. The referring physician is jointly involved in preparing patients for AE with the nursing and administrative staff as well as the validating flight surgeon. The referring physician in partnership with the validating flight surgeon maintains responsibility for the patient until the patient is under the direct care of the receiving physician at the destination medical facility. Responsibility can be transferred to another physician when accompanying the patient. However, the referring physician must ensure that patients have adequate levels of supplies and medications. The Patient Movement Clinical Coordinator (PMCC) at the PMRC should be contacted with any questions regarding the patient's movement. If any patient concerns arise during transfer, the PMRC will be notified for guidance or coordination. The PMRC may contact the referring physician for further direction. The following are some specific responsibilities of the referring physician.

3.17.1.1. Determine Appropriateness of AE. Almost any patient can be moved by AE if the proper care environment and specialized medical teams are planned for. When selecting and reporting a patient for AE, the advantages of AE must be balanced against the risks (austere environment, medical capabilities, and stresses of flight) and against other treatment or transport options for the patient. Generally, terminally ill or severely traumatized patients should not be moved if their condition makes flight survival unlikely.

3.17.1.2. Determine Movement Precedence. The referring physician determines how quickly the patient must be moved to the accepting physician.

3.17.1.3. Documentation. An accurate and complete diagnosis must be provided for AE validation. Orders must be comprehensive enough to cover all the patient's medication (including any self medications) and treatment needs in transit. The referring physician must consider both the care needed in the air and at interim stops. The orders must take into account the adverse effects of hypoxia, gas expansion, and a cold, dry, noisy environment on the patient.

3.17.2. MTF Flight Surgeon Responsibilities. At the originating MTF, physicians credentialed to practice flight medicine are responsible for determining whether patients can be moved successfully by air transport. If one is not available, the PMRC is available for consultation. The flight surgeon serves as a local resource for AE issues. Patients in RON status will remain under the care of the local flight surgeon unless transferred to other physicians for specialty or higher-level care. If transferred, the local MTF flight surgeon must assess whether the patient's condition warrants removal from AE until further stabilized for movement.

3.17.3. Theater AE Medical Director. The theater AE medical director is an experienced, credentialed flight surgeon, appointed by the theater command surgeon or AFFOR/SG to serve as the theater AE medical director. The AE medical director is responsible for occurrence screening and the quality of medical care provided in the respective AE theater and supervises theater validating flight surgeons. The theater AE medical director also serves as the PMRC chief of medical services for AE and conducts medical occurrence reviews when directed by the MAJCOM/SG.

3.17.4. Theater Validating Flight Surgeons (VFS). Each PMRC should have a validating flight surgeon (VFS) with the appropriate knowledge base and experience sufficient to ensure proper medical care and provide medical direction during patient transport. The theater VFS must ensure compliance with applicable accepted standards of practice for air and ground patient movement. If a medical situation warrants, the AECMs should contact the theater PMRC for medical advice/direction.

3.18. Medical Attendant Responsibilities. All medical attendants (MA) will be familiar with the patient and possess the level of skills appropriate to the patient's needs and are responsible for providing and coordinating patient care requirements with the MCD/FN. A physician accompanying the patient is the clinical authority for that patient's care. Documentation of patient care and medication administration in flight is the responsibility of the MA. The MA will

remain with and accompany the patient to the health care facility or may be relieved by another competent caregiver. NOTE: The majority of AE missions do not require MAs; they should only be requested in unusual cases. AE crews demonstrate competency in routine and intermediate patient care. In those cases involving more than routine or intermediate care requirements (e.g., a stabilized or critical patient), a CCATT should be tasked to accompany the patient.

3.19. Critical Care Air Transport Team (CCATT).

3.19.1. A CCATT is a specialty care or critical care team that can be added to the basic AE crew in order to offer a higher level of care to stabilized patients during AE staging and flight. When in flight, the CCATT physician is responsible for clinical decisions and care concerning the critically ill patient(s) and works under the operational direction of the MCD for mission management.

3.19.2. En route, the staging facilities should be notified of any unusual or critical care support requirements during RONs or extended periods on the ground. The ASF should arrange for patient care to ensure the CCATTs, MA, or AECMs are allocated rest/recovery periods. If they are unable to meet the needs of the patient, the PMRC, TACC, and aircrew should be notified in advance.

3.19.3. Requests for CCAT teams come from the originating physician, PMRC validating flight surgeon, or destination-accepting physician. CCATTs are tasked to augment theater evacuation requirements as directed by the AECT or the TACC AE cell.

3.20. AE Considerations. Several constraints inherent to aeromedical movement affect successful and timely AE. Consistent with voluntary consensus standards for aeromedical movement of patients, flight safety, operational constraints, and the physical environment of flight must be addressed. Weather, maintenance problems, availability of aircraft, crew duty day limitations, en route stops, and diversions may cause delays, cancellations, or denial of requests for patient movement by AE. Also, patients must not experience any degradation in the delivery of a required level of care as a patient moves through different phases of medical transportation, e.g. ground-to-air-to-ground. Once the originating medical staff communicates the patient care needs, AE crews strive to ensure continued delivery of medical care during the mission.

3.20.1. Response Time. Many factors influence response time for urgent (“U”) and priority (“P”) movements. Alternative sources of care or transport should be considered if the AE response time does not meet the patient's clinical needs.

3.20.2. Time En Route. A cornerstone of en route care is that a patient should not experience a decrease in the level of care he/she receives, bedside to bedside, as the patient moves from ground-to-air-to-ground phases of travel.

3.20.3. Equipment. Specific flight-certified equipment is used for AE. Stabilizing devices (casts, Collins traction, Stryker frames, halo-ring external fixation devices) are required for patients with fractures and spinal cord injuries. Swinging weights are not approved for use on AE missions.

3.20.4. Medication and Supplies. Patient medical supplies and patient movement items (PMI) may be provided when coordinated with the AE system in advance. Without advance coordination, the originating facility will be responsible for providing these items and should provide a 1-day minimum of supplies, except for patient movement from theater to CONUS and within CONUS where a 3-day minimum should be provided. Patients may travel with their own medications. Referring physicians should clearly specify medications, as they would on admission orders, by documenting them on the patient's treatment record.

3.20.5. Flight Environment.

3.20.5.1. Stresses of Flight. The stressors of flight can be broadly categorized into two classes: those that can quickly incapacitate patient and crew and those that exacerbate medical conditions. In certain age groups, such as neonates, stressors can be life threatening. The patient's ability to withstand the physiologic effects of flight will vary depending upon their underlying disease process and their age. Flight stressors include barometric pressure changes, decreased partial pressure of oxygen, decreased humidity, temperature variations, high noise levels, vibration, forces of acceleration, and travel fatigue.

3.20.5.2. Physiological Stresses of Flight. Patients in the AE environment are more susceptible to the physiologic stresses encountered at altitude. These factors must be considered prior to moving the patient. The temperature, pressure, volume, and relative mass of a gas influence the body's response to barometric pressure changes as the aircraft changes altitude.

3.20.5.3. Barometric Pressure Changes. Barometric/atmospheric pressure is the pressure exerted against an object by the atmosphere. On ascent, gas expands; and on descent, gas contracts. Trapped or partially trapped gases within body cavities (GI tract, lungs, skull, middle ear, sinuses, and teeth) expand and contract. Untreated gas expansion in the abdominal cavity can cause diaphragmatic crowding resulting in decreased lung volume and expansion. The ear and sinuses must adjust as the cabin pressure changes. Flying with a cold, sinus infection, or facial or head injuries may require decongestants or an altitude restriction. A patient who has conducted scuba diving operations within 24 hours prior to entry into the AE system may also require altitude restrictions. For guidance on cases such as these, the referring or attending physician should consult the appropriate PMRC.

3.20.5.4. Thermal Changes. Aircraft cabin temperature may fluctuate considerably. Extremely high temperatures may be reached while the aircraft is on the ground. In-flight temperatures tend to be cooler. Hyperthermia and hypothermia are seen in burns and frostbite. Both conditions increase the body's oxygen requirements.

3.20.5.5. Vibration. Mechanical energy is transferred to the tissues and increases muscle activity. Consider extra padding for injuries such as fractures to help diminish pain.

3.20.5.6. Turbulence. Turbulent air encountered during flight may overwhelm and/or incapacitate some patients; for example, nausea and vomiting may be exacerbated in pregnant patients or in cancer patients who are returning from recent chemotherapy.

3.20.6. Disease Transmission. Infection control is difficult. The enclosed cabin air does not undergo high efficiency particulate air filtration in military aircraft. Therefore, originating physicians should remain vigilant for the possibility of communicable diseases that can be transmitted to other patients, the crew, or the community at the destination medical facility. Physicians who move patients with known communicable diseases (including those resulting from possible biological warfare) must ensure appropriate protective measures are taken by the patient and/or aircrew, as necessary, to prevent disease transmission.

3.20.7. Psychiatric Patients. Psychiatric patients can present a significant risk to flight safety. The PMRC must look carefully for signs that psychiatric patients could act out during flight that would directly threaten the aircraft or personnel on board. Psychiatric patients typically are physically healthy and capable of independent actions that could directly threaten the crew and patients. Therefore, preflight review and validation should focus on demonstrated behavior. This information should be provided by the originating psychiatric and medical staff personnel.

3.20.8. Do Not Resuscitate (DNR) Patients. When a patient is diagnosed as having a terminal condition, the medical records must clearly state what the condition is. AE personnel are not allowed to accept partial resuscitation orders. In accordance with AFI 41-301, *Worldwide Aeromedical Evacuation,* AE patients must have a DNR order, annotated on the patient's DD Form 602, *Patient Evacuation Tag*, signed no more than 72 hours prior to the originating flight and covering the entire time in the AE system. The order must indicate either full resuscitation or DNR.

3.20.9. Patients Suffering the Effects of Biological or Chemical Warfare. Contaminated patients must be decontaminated before entering the AE system unless the theater CINC and USCINCTRANS direct otherwise. Decontamination and processing procedures must be in place to prevent spreading nuclear, biological, and chemical (NBC) agents and ensuring the appropriate protection for patients, aircrew, and aircraft.

3.20.9.1. Patients with disease conditions resulting from biological warfare should be decontaminated and have appropriate treatment initiated. Care givers at the referring facility must ensure that patients with communicable diseases are prevented from spreading the disease through the use of protective equipment by the patient and/or the crew as deemed necessary by competent medical authority. AF Manual (I) 44-156, *Treatment of Biological Warfare Agent Casualties*, gives detailed information for moving patients suffering from biological warfare exposure.

3.20.9.2. Patients exposed to chemical warfare agents must be decontaminated prior to AE. Once patients are externally contaminated, further AE decisions are based on actual or suspected clinical diagnosis and patient condition(s). Commanders, AE elements, and medical personnel should apply specific contamination control measures.

3.20.9.3. Biological warfare casualties may be evacuated using basic infection control guidelines. Evacuating contaminated patients and/or potentially contaminated patients requires the approval of the destination country, overflight privileges, and approval of any country where the aircraft will land for servicing or where patients will remain overnight. Close coordination between the supporting and supported CINCs and the Department of State is required for such movements.

3.20.10. Burn Patients. Burn patients are frequently transported on AE missions and require intensive in-flight nursing care. The expert burn management consultants for worldwide AE are at Brook Army Medical Center.

3.20.11. Spinal Cord Injuries. The goal for spinal cord injuries is to maintain spine stability and prevent further deterioration of the patient's neurological condition during transport. Stabilization of spinal cord injury patients can be accomplished with a C-Collar, backboard, headblocks, other non-shifting medium, Stryker frame with Collins traction, spinal cord injury transport system (SCITS), or halo-ring external fixation device.

3.20.12. Comfort Items and Procedures. Making a patient comfortable during AE requires knowledge of the stresses and hazards of flight. Evaluation of a patient's particular situation, using available equipment and improvising can provide many small comfort measures.

3.20.13. Medical Emergency in Flight.

3.20.13.1. When medical emergencies occur during flight, providers must take reasonable and necessary action, within their knowledge and experience, to preserve life and health. FNs will immediately start interventions following the most current advanced cardiac life support (ACLS)/basic life support (BLS) protocols.

3.20.13.2. The aircraft commander (AC) must be immediately notified regarding the gravity and nature of the situation. The AC will take appropriate actions, including landing at the nearest airfield proximal to a medical facility capable of handling the situation. In grave circumstances, the MCD may request the AC declare an in-flight medical emergency to expedite landing.

3.20.14. Death In-Flight. The MCD/FN will advise the AC of an apparent in-flight death and notify affected medical facilities of the change. The mission will proceed to the next scheduled military installation capable of handling the situation medically and operationally. A physician will meet the aircraft and pronounce the patient dead. In order to maintain patient confidentiality, no specific personal information is transmitted over the airwaves. The patient will be referred to by patient cite number only.

3.21. Medical Oversight. The Medical Oversight Board (MOB), chartered by the Air Force Surgeon General (HQ USAF/SG) and The Inspector General (TIG), sponsored the creation of a medical oversight system for all Air Force AE units. The oversight system consists of indicators that focus on patient care, clinical competence and requirements mandated by directives that are applicable to all AE units but which are not examined by any other method of inspection. The

AE Medical Oversight Guide outlines the current process and responsibilities of personnel at all levels.

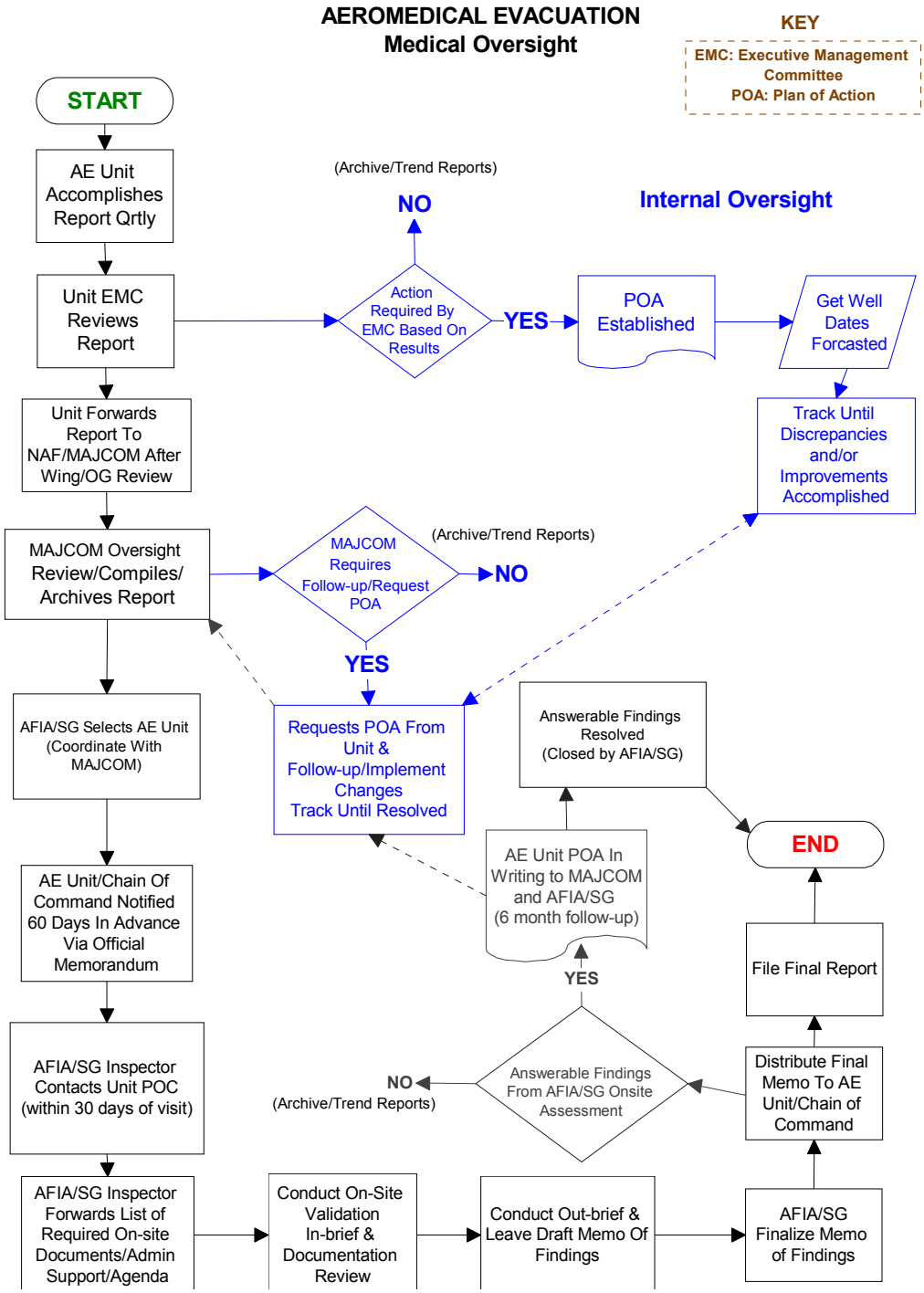
3.21.1. Purpose. The purpose of the AE medical oversight program is to assess a unit's ability to fulfill predetermined medical aspects of both its wartime and peacetime missions.

3.21.2. Criteria. Headquarters, Air Force Inspection Agency, Surgeon General **(**HQ AFIA/SG), in coordination with the MAJCOMs, derived criteria used to develop indicators from health care policies of the Office of the Assistant Secretary of Defense for Health Affairs, the Air Force Surgeon General, various civilian medical oversight agencies (such as the Joint Commission on Accreditation of Healthcare Organizations), ANG, and AFRC. The AFIA Health Services Inspection Guide containing related elements can also be used as a tool to ensure applicable programs are in compliance with established directives.

3.21.3. Indicators. Active duty and ARC units submit quarterly reports to the MAJCOMs/equivalents that consist of indicators focusing on clinical standards and AFSC-specific sustainment training in conjunction with other areas that require oversight. Established thresholds for the indicators trigger a need for squadron evaluation.

3.21.4. Process. The AE medical oversight process promotes sustained versus surge performance, with a goal of providing a consistent method of oversight and an independent assessment. Figure 3.3 provides a flow chart of the oversight reporting process and indicates key actions required as well as concurrent actions occurring at the unit and MAJCOM level.

Figure 3.3. AE Medical Oversight Process



Chapter 4

PLANNING AND SUPPORT CONSIDERATIONS

4.1. Movement of Casualties.

4.1.1. The movement of US casualties will be accomplished by all available forms of transportation, including ships, ground vehicles, and rotary- and fixed-wing assets. Although evacuation of patients from levels one and two is normally a Service responsibility, Air Force AE units may, depending upon the operational situation, evacuate casualties from forward airfields when requested to do so by the TSG or CINC. When tasked, the Air Force will execute patient movement requirements through the AE system. AE planning requires the integration of Joint and Service specific HSS capabilities into the theater or JFC's concept of operations. HSS considerations include the tactical mission and situation, enemy and friendly capabilities, threat assessment, and the theater evacuation policy. Comprehensive planning will ensure a coordinated effort in providing timely and effective AE and involves movement control and locating appropriate medical treatment facilities. The supporting joint/theater PMRC will be instrumental in developing fully coordinated patient movement plans.

4.1.2. Airframe assets to support AE may be dedicated, designated, or opportune. Patient movement may also require the use of commercial aircraft. During contingencies CRAF may be called into service. When appropriate, AE plans may integrate allied and/or other Services' airlift capabilities. Each patient's clinical requirements may also dictate specific airframe use. Aircraft appropriately marked or identified as AE meet Geneva Convention protective requirements. When developing and acquiring new airlift platforms, their suitability in an AE role should be considered. Minimum AE requirements should include: integral therapeutic oxygen capability that can be distributed throughout the patient care area, access to 110 VAC/50-400 HZ electrical outlets; a UHF SATCOM terminal system (USTS), HF, and VHF voice and data link communication port in the patient care area; an environmental control mechanism to maintain the patient care area temperature at 60-80 degrees F; either an integral or carry-on/carry-off litter support system. Additional, but not mandatory, assets could include: latrine and handwashing capability and galley provisions.

4.1.2.1. Dedicated. Dedicated aircraft are airframe assets solely apportioned to the AE mission. Use of dedicated airlift assets alone may not be efficient or effective in certain cases, especially if such assets are (a) limited in number or capabilities or (b) not located proximal to the patients requiring evacuation. When dedicated assets are used they should meet minimum AE requirements.

4.1.2.2. Designated. Designated aircraft are airframe assets that have been identified to support AE. Designated airframes, while capable of performing the AE mission, may not be tasked to perform this mission on a day-to-day basis. These assets should meet minimum AE requirements.

4.1.2.3. Opportune. Opportune aircraft are airframe assets that have been obtained primarily through retrograde mission tasking or through en route diversion and mission

reprioritization for AE use. Opportune airlift is the major airframe component of expeditionary AE. Requirements can vary from obtaining a seat to move ambulatory patients (or procuring a pallet position to move litter patients) to as much as procuring an entire aircraft to perform a single mission and can be identified from both military and CRAF assets. These assets may not meet minimum AE requirements.

4.1.2.4. Commercial. Airlift assets from commercial agencies support and augment patient movement operations. Such assets are normally air ambulance companies and commercial airlines. Their use is situationally dependent.

4.1.3. AE Civil Reserve Air Fleet (CRAF). The AE CRAF program provides airlift platforms, upon contract activation, from commercial airlines specifically to perform/support AE missions. CRAF AE equipment is supported through "ship sets" that provide components necessary to convert the Boeing 767-200/200ER/300/300ER aircraft to a configuration capable of performing AE missions.

4.2. Planning Factors. Medical planners must take many factors into account to select the best or most appropriate means of executing each AE mission. Planners must be thoroughly familiar with each Service component's unique patient movement capabilities as well as those of common-user airlift. Planners must know how AE interfaces with AF Medical Service aerospace medical contingency ground support systems, such as the small portable expeditionary aeromedical rapid response (SPEARR) team, the Expeditionary Medical Support (EMEDS) modules, and the Air Force Theater Hospital (AFTH). The general considerations for medical planners are listed and described below:

4.2.1. Airframe Considerations. Identifying availability of various airlift platforms appropriate for the volume and clinical requirements of the patients to be moved is critical. This identification must be done in coordination with the airlift control agencies. Again, patient movement is dependent on the airlift priority system. Each airlift platform has differing electrical, oxygen, onboard support, egress, and configuration issues and must be modified to meet specific mission requirements.

4.2.2. Airfield Capability. Proposed onload, en route, and offload airfields must be able to support the operation. Special equipment may be required to support the airlift platform being used. Planners should identify the proximity of each airfield to medical support facilities, as well as any operating restrictions such as quiet hours, approach restrictions, refueling restrictions, etc. In addition, mission planners must consider flight line security, secured launch, and PHOENIX Raven requirements for designated airfield locations.

4.2.3. Crew Management. Management of AECMs is essential for efficient system operations. It is imperative that planners ensure crew resources are allocated appropriately. The location and status of all crews must be known at all times and a designated replacement schedule to replace crews departing the theater must be established. Crew management includes support to all AE crewmembers, CCATTs, and other supporting medical members. Consideration must be given to length of crew duty day, augmentation of basic crews, required crew rest period, as well as ensuring transportation and billeting arrangements. AECMs will contact the appropriate C2 element in the theater.

4.2.4. Special Patient/Medical Requirements. These requirements address any considerations, equipment, flight restrictions, and other items that must be taken into account by the medical crew when executing the mission. This includes handling procedures for infectious patients as well as guidelines for the transport of contaminated patients.

4.2.5. Critical Care Air Transport Team (CCATT). CCATTs provide the essential critical care requirements in support of AE crews when evacuating critically injured and/or ill patients requiring intensive care during transportation. These teams are medically responsible for their patients and function under the in-flight direction of the medical crew director (MCD) and aircraft commander (AC). During contingencies, CCATTs are tasked through the AECT.

4.2.6. Base Operating Support. AE operations depend on integration with the Line of the Air Force (LAF) to provide base operating support. This support is required for AE units attached to specific locations as well as en route transient support during patient evacuation through the system and must be coordinated with appropriate agencies prior to deployment. These requirements include, but are not limited to, transportation (including patient transportation), messing and other consumable materials, water, fuels, cryogenics, liquid oxygen (LOX) and other gases (obtained from fuels or on a contract basis), billeting, latrines, showers, laundry, and security. Additional requirements include: alternate generator support (primary generator capability is included in allowance standards), fire protection, vehicle maintenance support, vehicle decontamination, maintenance and logistics, contracting, supportive information/communications systems maintenance, waste management, and personnel decontamination. AE UTC mission capabilities statements (MISCAPS) must be reviewed to determine specific requirement especially in regard to communication and transportation support.

4.2.7. Resupply. Sustained AE operations are dependent upon a well-designed AE resupply system for the continued availability of consumable medical supplies and PMI at all en route support locations. Planning for onboard or transportable therapeutic oxygen and any associated resupply is essential to prevent mission delays.

4.2.8. Communications. Transmission of detailed patient movement information, across all levels of care, is essential. Planners must address the type of communications options available, establish communication priorities, and direct preferred transmission modes. (See Chapter 4.)

4.2.9. Ground Transportation. Transportation used to transfer patients and equipment between the aircraft and medical facility at offload are significant planning factors. Planners must determine the availability of ambulances, ambuses, and other vehicles and, if necessary, establish contracts or obtain host-nation support to support operations.

4.3. Theater Evacuation Policy. The theater evacuation policy states the maximum number of days (hospitalization and convalescence) a patient may be held within the theater for treatment. Patients who, in the opinion of appropriate medical authority, cannot be returned to duty (RTD) within the period prescribed are evacuated as soon as practical to the next appropriate level of care for further treatment. The evacuation policy is normally 7 days for the combat zone and a

combined total of 15 days for the combat zone and the communications zone, in accordance with guidance from the Secretary of Defense in coordination with the geographic CINC and Chairman of the Joint Chiefs of Staff. Upon execution and during operations, the theater evacuation policy may be adjusted based on various factors including the number of definitive care beds available in, or deployable to, the theater. It is important to note, the evacuation policy does not imply that a patient must be held in the theater for the entire period of the theater evacuation policy. Patients not expected to RTD within the number of days expressed in the theater evacuation policy will normally be evacuated as soon as their medical condition permits or when local stabilization capabilities have been reached; or when medical authorities have determined that travel will not aggravate their disabilities (at a minimum, patients will have their airway secured, bleeding controlled, shock treated, and fractures immobilized); and when suitable, receiving MTFs and transportation have been arranged.

4.4. AE Interface With Aerospace Medical Contingency Ground Support System (AMCGSS).

4.4.1. The Aerospace Medical Contingency Ground Support System represents the manner in which the Air Force Medical Service (AFMS) supports the Expeditionary Aerospace Force (EAF) and AEFs. This system is composed of UTC building blocks that provide personnel and equipment to meet specific operational requirements. These UTCs enable the Air Force Theater Hospital (AFTH) to expand in modules to meet the full spectrum of theater requirements to include significant specialty care. These capabilities will be utilized to provide essential care, deferring definitive care to CONUS or supporting theaters. The Aerospace Medical Contingency Ground Support System consists of Squadron Medical Elements, Independent Duty Medical Technicians, Expeditionary Medical Support (EMEDS) Basic (Modules 1 and 2), and the EMEDS +10 and +25 AFTH which provides a Level 3 theater hospital. Refer to AFTTP 3-42.7, *Aerospace Medical Contingency Ground Support System,* for further information.

4.4.2. The AE system interfaces with the whole spectrum of AMCGSS capabilities and provides a critical service through rapid casualty evacuation. This interface begins with initial medical elements, to include SPEARR teams (EMEDS Basic Module 1), and provides communication, AE liaison, and flight clinical coordinator functions. The expeditionary AE coordination team (EACT) is designed to provide this initial AE coordination and patient preparation and will deploy with the SPEARR, who provide initial trauma and surgical intervention and public health assessment. Expeditionary AE crewmember support (EACS) is established to transport stabilized casualties. If collocated staging capability is required, an expeditionary AE staging team (EAST) can be deployed and additional staging capability can be expanded through inserting mobile AE staging facilities (MASF). AE response is critical to meet the mission requirements of the AMCGSS patient holding capability.

4.5. Special Operations Forces (SOF) Requirements.

4.5.1. Evacuation of SOF casualties within the joint special operations arena can be a particularly complex issue, since special operations forces often operate in small, widely dispersed teams and in locations not easily accessible. Flexibility and sensitivity to the

particular needs of the SOF community will be important considerations in determining how to best support their AE requirements.

4.5.2. SOF aircraft, if used, are typically not medically equipped or staffed. The medical planner must establish an exchange of sufficient information to provide medical support for the plan. SOF missions are often politically sensitive and it may be necessary to safeguard a patient's identity.

4.6. Medical Implications and AE Operations in a Chemical, Biological, Nuclear, Radiological, and High Energy (CBNRE) Environment.

4.6.1. Disease and Nonbattle Injury (DNBI). Historically, DNBI has accounted for over 80 percent of personnel admitted to hospitals during contingency operations. DNBI is variable and depends on operating location, operational tempo, climate, terrain, socioeconomic and public health conditions, and the military operations involved. Environmental intelligence sources, preventive medicine teams and techniques, theater epidemiology teams, proper waste management, consultation with specialists, advanced treatment modalities and diagnostics, and medical information management systems are instrumental in minimizing the threat.

4.6.2. Conventional Weapons. Conventional weapons include small arms fire, precision-guided munitions, antipersonnel/vehicle mines, tube and rocket artillery, aerial bombs, cruise and ballistic missiles, and others. Treatment of injuries from conventional weapons is enhanced through advanced diagnostic capabilities, use of equipment, specialty consultation, medical information access, the ability to process tests and data rapidly, and expeditious aeromedical evacuation.

4.6.3. Weapons of Mass Destruction (WMD)/CBNRE Weapons. Nuclear, biological, and chemical weapons represent some of the most destructive weapons known to mankind. Chemical and biological weapons can be relatively inexpensive and may be easily produced. The acquisition of biological and chemical weapons is especially attractive to those nations who are unable to fund, field, or maintain a military capable of defeating an adversary using traditional conventional means. Due to proliferation of biological and chemical agent production capabilities and means of delivery, the possibility of biological or chemical attack or exposure poses a significant threat. An important biological warfare preventive measure is vaccination. Preventive medicine and medical surveillance teams, coupled with advanced medical information, communication, and diagnostic systems, represent medical defense capabilities which work in concert with other current and projected defense measures, such as reconnaissance, sampling, detection, identification, warning, and the physical protection provided by personnel protective equipment and shelters. Radiological TIMs and new technology high-energy weapons are also a threat.

4.6.3.1. Patients contaminated with nuclear, biological, or chemical agents will normally be decontaminated prior to evacuation. If decontamination is not possible, only the theater CINCs and USCINCTRANS will decide when aircraft will be used for evacuation. Commanders must understand that using aircraft and personnel for this purpose may result in a loss of those assets for the duration of theater operations.

Additionally, the aircraft must have permission to land at its intended destination before any contaminated patients or passengers are off-loaded from the aircraft.

4.6.3.2. If the decision is made to move NBC exposed patients using AE resources, large numbers of patients may need to be transported within a short period of time. Crews should maintain a high degree of situational awareness and training to ensure they are properly prepared to move patients in these situations. Under certain circumstances, AE crews may be required to wear protective gear. When in protective gear, AE crews are severely limited in their ability to assess the patient and may have to remove portions of their (or the patient's) ensembles in order to palpate, auscultate, or visually examine the patient. This could expose the patient, crew, and airframe to lethal doses of an agent.

4.6.3.3. A nuclear incident also has the potential to instantaneously produce a very large number of casualties, severely impacting the entire medical treatment and evacuation systems. The resulting patients can be at extremely high risk and frequently may require ventilator support.

4.7. Information Warfare (IW). Information systems, their burgeoning connectivity, and the wealth of valuable information processed by, and stored in these systems, make them attractive targets. Threats to such systems are worldwide in origin, technically diverse, and growing rapidly. Planning for AE system requirements must provide the security necessary to eliminate or significantly reduce the risk of vulnerability to these threats.

4.8. Potential Hostile or Terrorist Locations. The requirements for security forces to support AE missions must be considered in the planning process. The PHOENIX Raven program provides these specially trained security forces personnel to protect AMC aircraft and will be included on all AE missions to locations designated "Ravens required." AECMs will carry weapons, when appropriate and authorized, to protect themselves and their patients.

4.9. Integration of Service Patient Movement. Each Service provides a means for the movement of patients. The mode of movement and medical personnel available for that movement differ. The Air Force employs fixed-wing aircraft for the movement of patients and utilizes AECMs to supervise medical treatment of those patients. Other US and international services use various ground transport and rotary- and fixed-wing aircraft for patient movement. They also use their own medically trained crewmembers or medical attendants. US Air Force AE aircrew members may perform appropriate duties in non-US Air Force aircraft if it is in the interest of the US Government and approved by the theater CINC and the controlling aircraft authority.

4.10. Operations Phasing and Force Sequencing.

4.10.1. AE forces provide a rapid, flexible, incremental, mobile response. Several elements are employed to provide command, control, communications, patient care, and system support. Force packages are developed based on a building block principle. This allows planners to select specific packages required to support steady state as well as contingency operations, or those used for developing major theater war (MTW) operation plans (OPLANs).

4.10.2. The initial building block for all force packages is the established peacetime infrastructure and is based on UTC components. From this, patient care elements are provided, followed by ground medical support, in-flight medical crews, additional C2 and other functions. Finally, support operations are augmented with forces providing additional logistical expertise to keep the AE system operating. The build up of AE forces must occur early and in conjunction with the deployment of initial medical capability. (See Figure A2.1, *Notional Force Buildup With Modular AE UTCs.*)

4.10.3. The AE system needs to have the capability to move casualties after minimal stabilization from forward areas. This drives a requirement to provide continuity of care at the patient staging point and during transportation. Usually, this means the ability to continue basic to advanced life support while en route to further definitive medical care when it is required. Patients may be moved from forward areas of the combat zones depending on the nature of the operation and the placement of specific medical forces. Moving "stabilized," as opposed to "stable," patients has increased the need to have critical care capability available in the system. Specific AE UTCs provide such a capability by including critical care specialists from the medical, nurse, and enlisted corps.

4.10.4. Equipment packages are designed to be highly mobile and capable of functioning in an austere environment. As workloads change (increase or decrease), or are expected to change, additional packages of personnel and equipment may be deployed or redeployed in increments or combined with previously deployed forces at certain locations. The total organizational design will be tailored to meet mission requirements.

4.11. AE Unit Type Codes (UTCs). (See Attachment 2.) AE UTCs are developed based on the UTC "plug-in/pull-out" principle, allowing planners to select specific UTCs capable of supporting the range of steady state, contingency, or MTW OPLANs. Each UTC is developed to support C2, patient staging, support, operational, or patient care requirements and each has mission-specific tasks and responsibilities.

4.12. AE UTC Employment Concept. The theater aeromedical evacuation system (TAES) employs UTCs to provide AE command, control, communications, patient care, and system support to meet mission requirements under potentially changing conditions. At a minimum, in order for a TAES to exist, UTCs must be deployed to: 1) establish a C2 structure and a communication link between the user and the AE system, 2) provide patient staging at an airfield, and 3) provide in-flight care. Force packages are groupings of UTCs that are deployed to meet a unique or enhanced capability requirement. AE UTCs are specifically designed to provide the maximum amount of flexibility to commanders and planners to meet the full spectrum of AE operations to include wartime, humanitarian, and disaster response operations. The UTCs are divided into three categories: patient care, AE support, and C2. (See Attachment 2.)

4.13. AE Equipment and Supplies.

4.13.1. Sustained medical logistics support for AE operations is essential. Reachback and resupply operations ensure sustainment of theater forces. Maintenance and refilling of liquid oxygen containers must be accomplished. Other items of interest are the shipment of in-

flight medical kits and interface with prime vendor suppliers to fulfill deferred procurement items.

4.13.2. The in-flight AE environment subjects medical equipment to unique stresses. Equipment must be able to withstand the environmental extremes of temperature and humidity, aircraft vibration, altitude and rapid decompression of the aircraft, and electromagnetic interference to and from the aircraft. It must also interface with the aircraft and not pose any safety hazards to the patients or aircrew. Equipment items must be tested and certified as airworthy and compatible with Air Force AE aircraft.

4.14. Responsibilities.

4.14.1. As the lead command for AE, HQ AMC provides continuous review and oversight of the AE system, thus ensuring the AE force is appropriately supplied and equipped to perform the mission. The Equipment Review Working Group (ERWG), which consists of representatives from all aspects of AE, to include aircrew members, nursing, administration, operations, communications, and logistic personnel, was chartered by the AMC Command Surgeon to be the AE equipment review authority. The ERWG reviews equipment package allowance standards, examines new equipment requirements, and coordinates with the Human System Center—Technical Planning Integrated Product Teams, Air Force Medical Logistics Office (AFMLO), and the Joint Readiness Clinical Advisory Board (JRCAB) to facilitate standardization and compatibility with the joint community.

4.14.2. The Air Force Medical Development Laboratory (AFMEDL) at Brooks AFB, Texas, is responsible for the airworthiness evaluation process for new or proposed medical devices for AE. They validate that the devices function as expected, noting any design weaknesses or potential safety hazards. The devices are put through a stringent test profile, which includes vibration, electromagnetic interference, electrical safety, and altitude and airborne performance testing IAW AFIs and military standards (MIL-STDs). The AFMEDL personnel work with AMC/SGX and the device manufacturers to correct any testing deficiencies IAW the acquisition contract. Based on their findings, the AFMEDL classifies the medical device as approved, conditionally approved, or disapproved. All medical equipment utilized for AE must be certified by AFMEDL as safe for use in aircraft.

4.15. Interoperability. With respect to patient movement, the overarching goal of the Air Force Medical Service (AFMS) is to ensure seamless patient transport and continuity of care from point of injury to point of definitive care. To fully accomplish this goal, medical equipment used by initial care providers must be interoperable and capable of supporting patient care requirements through the duration of the move, regardless of the mode of movement.

4.16. Patient Movement Items (PMI).

4.16.1. A major factor in the movement of patients through the levels of care is to ensure specific medical equipment and durable supplies designated as PMI are available. The PMI system supports the in-transit patient care capability without removing equipment from patients, exchanges like-kind PMI without degrading medical capabilities, and provides prompt recycling of PMI. The system provides a seamless in-transit patient and/or

equipment management process from initial entry into AE to the patient's final destination. PMI system UTCs will deploy in support of the AE system and be collocated with AE at key interface points to provide initial AE operational capability, to sustain AE operations, and to minimize equipment turnaround time. Equipment will be managed, supplied, and resupplied through the PMI centers and joint transportation and logistics systems. It is the originating health care facility's responsibility to provide the PMI required to support the patient during evacuation. Due to the small footprint of some medical facilities, such as the initial increments of the AMCGSS, providing medical supplies and equipment to accompany patients through the evacuation process may be difficult. Therefore, when PMI are coordinated with the AE system in advance most items can be provided from the AE staging base. PMI accompanies a patient throughout the chain of evacuation, from the originating MTF to the destination MTF. PMI centers "push" equipment to the forward locations where patients encounter the AE system.

4.16.2. While the PMI program is mandated by the Assistant Secretary of Defense (Health Affairs), the USAF/SG has oversight responsibility, and AMC/SG has program management responsibility. Development and implementation is shared by AMC/SG with the AFMLO, who coordinates the PMI procurement processes. Periodic reviews of the PMI program will be conducted to address such details as items to be managed, required quantities, theater situation changes, supplementary items, process improvements, and overall program status.

4.16.3. In peacetime, the MAJCOM surgeons are executive managers of PMI within their areas; i.e., AMC/SG, PACAF/SG, USAFE/SG. Usually positioned at strategic AE hubs, PMI centers will store and maintain PMI while actively interfacing with AE operations. In CONUS, the centers will be established at the east (Andrews AFB, Maryland), west (Travis AFB, California), and central (Scott AFB, Illinois) hubs with a link to AMC/SG for direction of the PMI program. OCONUS PMI management should be a function of the existing theater AE units at their hubs (Ramstein AB, Germany, and Yokota AB, Japan). Additional centers and storage locations may be designated in accordance with theater plans for AE.

4.16.4. During contingency situations, at the direction of the theater CINC, the PMI system will activate as an exchange service in coordination with the theater/joint task force AE cell and the PMRC for that particular contingency. PMI processes can start at aeromedical staging sites or MTFs depending on theater factors such as facilities, airstrip locations, available manpower, degree of conflict, and urgency of need in conjunction with theater plans. PMI personnel will operate out of PMI centers and forward locations, called PMI cells. Initial theater PMI requirements of centers and cells will be supported by deployable UTCs. This aspect of mobility puts knowledgeable personnel with available assets at appropriate forward locations to carry out PMI functions. During contingency operations, the AE cell under the theater CINC, directs the PMI activities for that theater.

4.16.5. The PMI UTC provides medical logistics and biomedical equipment maintenance personnel. Medical logistics personnel manage inventory availability (at centers and cells), asset visibility, and flow of PMI through available transportation methods to meet requirements. The biomedical maintenance technicians focus on item serviceability (at a center) and the timeliness and quality of biomedical services.

4.16.6. In those situations where patients enter the AE system at unplanned locations, PMI exchanges may be after the fact. In accordance with joint doctrine, theaters may initiate single integrated medical logistics management (SIMLM). The SIMLM is the source for medical materiel in the theater. The PMI center coordinates with the SIMLM on asset availability, materiel demand, and transportation.

4.17. Strategic Considerations. In CONUS, all PMI comes under the purview of AMC/SG with a responsibility to support theater requirements. If the AE segment of CRAF is activated, AMC/SG may use these additional assets to augment PMI program operations.

4.18. PMI Inventory. AMC/SG responsibilities include identifying the quantity required for each item in the PMI program based on current planning guidance. The requirements are then roughly divided between theaters based on patient stream projections. PMI quantities, by center, will be spelled out in an allowance standard based on requirements. Prepositioning of some of the requirements at sites other than centers within a respective theater will be determined by the responsible or supporting MAJCOM/SG. Supplementary items, such as batteries, shipping containers, and disposable components, will also be stocked by the PMI centers.

Chapter 5

TRAINING

5.1. Objective. The overall objective of the AE training program is to develop and maintain a high state of mission readiness of AE personnel for rapid employment across the spectrum of operational requirements. AE personnel must be able to prepare any AE capable aircraft for patient evacuation and provide appropriate in-flight care.

5.2. Responsibilities. HQ AMC is the lead command for AE as specified in AFPD 11-2, *Aircraft Rules and Procedures*, and AFPD 10-21, *Air Mobility Lead Command Roles and Responsibilities*. HQ AMC is responsible for standardizing aircrew flying training requirements in coordination with other user MAJCOMs. The AMC Command Surgeon (HQ AMC/SG), in conjunction with AMC Director of Operations (HQ AMC/DO), is the lead command designee for training course requirements, training tasks, and coordinating the development and publication of AE training standards. The Global Aeromedical Evacuation Training Team (GAETT) is the clearinghouse for clinical and operational issues that impact the global AE system. The GAETT interacts with the AE Steering Group and other agencies to develop, standardize, deploy, and evaluate programs and platforms in response to customer requirements. The USAF School of Aerospace Medicine (USAFSAM) is responsible for the formal school syllabus that is designed to meet user requirements.

5.3. Medical Aircrew Qualification.

5.3.1. The primary method of AE aircrew qualification is to attend and complete the appropriate formal training course listed in Education Training Catalog Agency (ETCA) 36-2223. Completion of the appropriate formal course satisfies the didactic requirements. In-unit qualification training is then required for AECMs to become fully qualified in their unit specific mission design series (MDS). All AECMs must also meet requirements listed in AFI 48-123, *Medical Examination and Standards,* and complete physiological training.

5.3.2. Qualification training may occur at the unit level until a formal AF school is established. It must be completed within 90 days of the first flight (180 days for ANG/AFRC) and it consists of ground and flight training areas. Ground training covers aircraft systems, aircraft emergency equipment, life support, medical emergency equipment, and patient care procedures. Flight training consists of training flights that reemphasize ground training areas in an operational environment. Students must experience a variety of mission scenarios during their training to include aircraft and medical emergencies as well as survival, evasion, resistance, and escape training.

5.4. AE Contingency Operations Training (AECOT) and Training for Ground Personnel.

AECOT is conducted at Sheppard AFB, Texas, and provides initial and sustainment training for all AE UTCs as well as UTCs augmenting AE. The course emphasis is on readiness and preparation for wartime or contingency operations and teaches personnel the entire spectrum of AE ground operations. Training encompasses all phases of deployments to include predeployment, employment, post-employment, and post-deployment activities. Training

consists of patient care within the AE system, hazardous cargo certification, cargo processing, pallet building, vehicle loading, aircraft configuration, aircraft load planning, and aircraft loading.

5.5. Aircraft Training. It is imperative that all available aircraft be considered for patient transport to save life, limb, eyesight, or prevent complications from serious illness. The existing aircraft certification program is designed for qualified and current AECMs to train and orient on aircraft on which they are not qualified, prior to performing an AE mission. Minimum requirements for certification include aircraft emergency procedures and equipment, ground and in-flight safety issues, compatibility of AE equipment with the aircraft, and a ground or flight training period. Certification has the same training objective as qualification, except it does not require a flight evaluation.

5.6. Critical Care Air Transport Team (CCATT) Training.

5.6.1. CCATTs are composed of a critical care or internist physician, a critical care nurse, and a cardiopulmonary technician skilled in respiratory therapy. They comply with all mobility requirements associated with their mobility positions and maintain all professional and clinical credentials associated with their AFSCs and duty positions.

5.6.2. CCATT training requirements are determined by the manpower, equipment, and force packaging (MEFPAK) manager (AMC) and the CCATT pilot unit. Training includes attendance at the CCATT formal course at Brooks AFB. Physicians are trained in advanced cardiac life support (ACLS) and advanced trauma life support (ATLS). Critical care nurses are trained in ACLS and Trauma Nurse Core Course (TNCC). Cardiopulmonary technicians are trained in ACLS.

5.6.3. Sustainment training requirements are developed and approved by the GAETT and are completed at the prescribed frequency. Areas covered include contingency operations, aeromedical tasks, flying, and clinical tasks. Other training may be obtained through participation in exercises such as PACIFIC WARRIOR or rotations at the Joint Readiness Training Center as well as attendance at formal courses such as AECOT or the Combat Casualty Care Course. Team members may be affiliated with civilian professional organizations that are interested in air medical transport such as the Air Medical Physicians Associations or the Air and Surface Transport Nurses Association.

5.7. Professional Education.

5.7.1. Flight nurses are licensed, registered nurses with a variety of clinical expertise. Nurses are certified by various professional organizations including, but not limited to, the American Heart Association for both ACLS and BLS, the Association of Emergency Nurses for Trauma Nurse Core Course (TNCC), the National Flight Nurse Association (NFNA) for Certified Flight Nurse (CFN), the Board of Certification for Emergency Nursing (CEN), and the Association of Critical Care Registered Nurses (CCRN). All nurses are responsible for clinical competency based on the AFSC-specific (46F and 46N) series core competency list approved by the Director, AF Nursing Services.

5.7.2. Clinical training for aeromedical evacuation technicians (AETs) is governed by the Career Field Education and Training Program (CFETP), a universally accepted plan by which the technicians train in all facilities and AE squadrons. In addition, all AETs are certified as both an emergency medical technician (EMT) and BLS provider.

5.8. Currency Training. To maintain currency, each AECM must meet requirements established IAW AFI 11-301, *Aircrew Life Support (ALS) Program;* AFI 11-202, Volume 1, Aircrew Training, Volume 2, Aircrew Standardization/Evaluation Program, and Volume 3, General Flight Rules; and AFI 11-2AE Volume 1, *Aeromedical Evacuation Aircrew Training,* and Volume 2, *Aeromedical Evacuation Aircrew Evaluation Criteria.* These include minimum number of flying hours, periodic written examinations and flight evaluations, maintenance of a current flight physical, and periodic completion of physiological training, life support, ground egress, and medical equipment training.

5.9. Forms Prescribed.

5.9.1. AF Form 3899, *Aeromedical Evacuation Patient Record*.
5.9.2. DD Form 601, *Patient Evacuation Manifest*.
5.9.3. DD Form 602, *Patient Evacuation Tag*.

LANCE L. SMITH, Major General, USAF
Commander, Air Fore Doctrine Center

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

JP 3-17, *Joint Doctrine and Joint Tactics, Techniques, and Procedures for Air Mobility Operations*
JP 4-02, *Doctrine for Health Service Support in Joint Operations*
JP 4-02.2, *Joint Tactics, Techniques, and Procedures for Patient Movement in Joint Operations*
AFDD 2, *Organization and Employment of Aerospace Power*
AFDD 2-1.8, *Counter Nuclear, Biological, and Chemical Operations*
AFDD 2-5, *Information Operations*
AFDD 2-6, *Air Mobility Operations*
AFPD 10-21, *Air Mobility Lead Command Roles and Responsibilities*
AFH 10-2502, *USAF Weapons of Mass Destruction (WMD) Threat Planning and Response Handbook [draft]*
AFPD 11-2, *Aircraft Rules and Procedures*
AFI 11-2AE, Vol 1, *Aeromedical Evacuation Aircrew Training* AFI 11-2AE, Vol 2, *Aeromedical Evacuation Aircrew Evaluation Criteria*
AFI 11-202 Vol 1, *Aircrew Training*
AFI 11-202 Vol 2, *Aircrew Standardization/Evaluation Program*
AFI 11-202, Vol 3, *General Flight Rules*
AFI 11-301, *Aircrew Life Support (ALS) Program*
AFPD 41-3, *Worldwide Aeromedical Evacuation*
AFI 41-301, *Worldwide Aeromedical Evacuation System*
AFI 41-302, *Aeromedical Evacuation Operations and Management*
AFJI 41-306, *Physician's Roles and Responsibilities in Aeromedical Evacuation [draft]*
AFI 41-307, *Aeromedical Evacuation Patient Considerations and Standards of Care [draft]*
AFI 41-309, *Aeromedical Evacuation Equipment Standards*
AFJH 41-313, *Aeromedical Evacuation Documentation [forthcoming]*
AFI 41-316, *Aeromedical Evacuation In-flight Kit Packaging Guide*
AFI 44-102, *Community Health Management*
AFI 44-109, *Mental Health and Military Law*
AFI 44-119, *Medical Service Quality Improvement and Risk Management*
AFMAN (I) 44-156, *Treatment of Biological Warfare Agent Casualties*
AFI 46-101, *Nursing Operations*
AFI 48-123, *Medical Examination and Standards*

Supporting Information

Comprehensive Accreditation Manual for Hospitals: The Official Handbook (CAMH), and the *Comprehensive Accreditation Manual for Ambulatory Care* (CAMAC), (1997-98). Joint Commission on Accreditation of Healthcare Organizations.

Emergency Nurses Association Trauma Nursing Core Course, fourth edition (1996). Emergency Nurses Association.

Holleran R., (Ed). (1996). *Flight Nursing: Principles and Practice,* St. Louis: Mosby-Yearbook, Inc.
The Society of United States Air Force Flight Surgeons. (1993). *Flight Surgeon's Checklist,* Brooks AFB: United States Air Force.

Abbreviations and Acronyms

AAST .....AE Administrative Support Team
AAW .....aeromedical airlift wing
AC .....aircraft commander
ACC .....Air Combat Command; air component commander
ACLS .....advanced cardiac life support
ADCON .....administrative control
ADVON .....advanced echelon
AE .....aeromedical evacuation
AECAT .....Aeromedical Evacuation Command Augmentation Team
AECOT .....Aeromedical Evacuation Contingency Operations Training
AECE .....aeromedical evacuation command element
AECM .....aeromedical evacuation crewmember
AECMC .....AE Crew Management Cell
AECT .....aeromedical evacuation control team
AEF .....Aerospace Expeditionary Force
AEG .....aerospace expeditionary group
AELT .....Aeromedical Evacuation Liaison Team
AEOT .....Aeromedical Evacuation Operations Team
AEPST .....Aeromedical Evacuation Plans and Strategy Team
AESC .....Aeromedical Evacuation Support Cell
AET .....aeromedical evacuation technicians
AETF .....Aerospace Expeditionary Task Force
AFB .....Air Force Base
AEW .....aerospace expeditionary wing
AFFOR .....Air Force forces
AFH .....Air Force Handbook
AFI .....Air Force Instruction
AFIA .....Air Force Inspection Agency
AFJMAN .....Air Force Joint Manual
AFMEDL .....Air Force Medical Development Laboratory
AFMLO .....Air Force Medical Logistics Office
AFMS .....Air Force Medical Service
AFPD .....Air Force Policy Directive
AFRC .....Air Force Reserve Command
AFSC .....Air Force specialty code
AFTH .....Air Force Theater Hospital
AFTTP .....Air Force Tactics, Techniques, and Procedures
AGE .....aerospace ground equipment
ALCT .....Airlift Control Team
ALS .....aircrew life support

AMC .....Air Mobility Command
AMCGSS .....Aerospace Medical Contingency Ground Support System
AMCT .....Air Mobility Control Team
AMD .....Air Mobility Division
AME.....Air Mobility Element
AMOCC.....Air Mobility Operations Control Center
ANG.....Air National Guard
AO.....area of operations
AOC .....aerospace operations center
AOR .....area of responsibility
APOD.....aerial port of debarkation
ARC .....Air Reserve Component
ARCT.....Air Refueling Control Team
ASF .....Aeromedical Staging Facility
ATLS.....advanced trauma life support
BLS .....basic life support
C2.....command and control
C4.....command, control, communications, and computers
C4I.....command, control, communications, computers, and intelligence
CAA .....civilian air ambulance
CAELO .....Chief, Aeromedical Evacuation Liaison Officer
CAEO.....Chief, Aeromedical Evacuation Operations
CASEVAC.....casualty evacuation
CBNRE .....chemical, biological, nuclear, radiological, and high energy
CCATT .....Critical Care Air Transport Team
CCRN.....Critical Care Registered Nurse
CDC .....Center for Disease Control
CEN.....Certification for Emergency Nursing
CFETP.....Career Field Education and Training Program
CFN.....Certified Flight Nurse
CHOP.....change in operational control
CINC .....commander in chief; commander of a combatant command
CMT.....charge medical technician
COCOM.....combatant command (command authority)
COMAFFOR.....Commander, Air Force Forces
COMMZ .....communications zone
CONOPS.....concept of operations
CONUS.....continental United States
coord .....coordination
CRAF .....Civil Reserve Air Fleet
CW/BW.....chemical warfare/biological warfare
DEPMEDS.....Deployable Medical Systems
DIRMOBFOR.....Director of Mobility Forces
DNBI.....disease and nonbattle injury
DNR .....do not resuscitate
DOD.....Department of Defense
DVA.....Department of Veterans Affairs

EACE .....Expeditionary Aeromedical Evacuation Command Element
EACT .....Expeditionary Aeromedical Evacuation Coordination Team
EACS .....Expeditionary Aeromedical Evacuation Crew Support
EAF .....Expeditionary Aerospace Force
EAS .....expeditionary airlift squadron
EASF.....Expeditionary Aeromedical Staging Facility
EAST.....Expeditionary Aeromedical Staging Team
ELT .....Expeditionary Liaison Team
EMEDS .....expeditionary medical support
EMT .....emergency medical technician
EOG .....expeditionary operations group
EOG/CC.....expeditionary operations group commander
EOS .....expeditionary operations squadron
EPW .....enemy prisoner of war
ERWG.....Equipment Review Working Group
ETCA .....Education Training Catalog Agency
FHP .....force health protection
FN .....flight nurse
GAETT .....Global Aeromedical Evacuation Training Team
GPMRC.....Global Patient Movement Requirements Center
HF .....high frequency
HSS .....health service support
IAW.....in accordance with
ICMOP.....Integrated CONUS Medical Operations Plan
ITV.....in-transit visibility
IV .....intravenous
IW .....Information Warfare
JAOC.....Joint Air Operations Center
JFACC.....Joint Force Air Component Commander
JFC .....joint force commander
JFS.....Joint Force Surgeon
JMCC .....Joint Mobility Control Center
JOA .....joint operations area
JOSAC .....Joint Operations Airlift Support Center
JP.....joint publication
JPMRC.....Joint Patient Movement Requirements Center
JRCAB .....Joint Readiness Clinical Advisory Board
JTF .....Joint Task Force
LAF .....Line of the Air Force
LOX .....liquid oxygen
MA .....medical attendant
MAJCOM .....major command
MASF.....Mobile Aeromedical Staging Facility
MCC.....Mobility Control Center
MCD .....medical crew director
MDS.....mission design series
MEDEVAC.....medical evacuation

MEFPAK .....manpower, equipment, and force packaging
MILSATCOM.....military satellite communications
MIL-STD .....military standard
MISCAPS .....mission capabilities statements
MOB .....Medical Oversight Board
MRO .....Medical Regulating Officer
MTF .....medical treatment facility
MTW.....major theater war
NBC .....nuclear, biological, and chemical
NCA .....National Command Authorities
NEO .....noncombatant evacuation operation
NFNA.....National Flight Nurse Association
OPCON.....operational control
OPLAN .....operation plan
PACAF.....Pacific Air Forces
PAD.....Patient Administration Director
PMCC .....Patient Movement Clinical Coordinator
PMI .....patient movement items
PMR .....Patient Movement Request
PMRC .....patient movement requirements center
POW.....prisoners of war
RON .....remain overnight
RTD.....return to duty
SATCOM.....satellite communications
SCITS.....spinal cord injury transport system
SG .....Surgeon General
SIMLM .....single integrated medical logistics management
SOF .....special operations forces
SPEARR .....small portable expeditionary aeromedical rapid response
SSC .....small-scale contingency
TACC.....Tanker/Airlift Control Center
TACON.....tactical control
TAES.....theater aeromedical evacuation system
TALCE.....Tanker/Airlift Control Element
TCSG .....USTRANSCOM Surgeon
TIG.....The Inspector General
TIM .....Toxic Industrial Materials
TMCC .....Theater Mobility (Movement) Control Center
TNCC.....Trauma Nurse Core Course
TPMRC.....Theater Patient Movement Requirements Center
TSG.....theater surgeon
TTP .....tactics, techniques, and procedures
USAFE.....United States Air Forces in Europe
USAFSAM.....USAF School of Aerospace Medicine
USCINCTRANS.....Commander in Chief, United States Transportation Command
USTC .....See USTRANSCOM
USTRANSCOM .....United States Transportation Command

USTS.....UHF SATCOM terminal system
UTC.....unit type code
VFS .....validating flight surgeon
WMD .....weapons of mass destruction

Attachment 2

AE UNIT TYPE CODES

A2.1. Patient Care UTCs.

A2.1.1. AE Crewmembers (AECMs). AECMs perform in-flight medical care and must meet the training requirements to function safely on board fixed-wing aircraft. Type of aircraft, patient numbers and acuity, and length of mission will dictate the number of crews needed for each mission. Crews will be augmented with additional crewmembers and CCATTs as mission requirements dictate. They can also augment any ground UTC requiring additional clinical crew management or mission support capability. This UTC is a component of the Aeromedical Evacuation Operations Team (AEOT) and EAST force packages.

A2.1.2. Critical Care Air Transport Team (CCATT). CCATTs provide essential critical care requirements, in conjunction with AE crews, to evacuate critically injured/ill patients requiring advanced care during transportation. Each team can support a maximum of four critically ill patients. CCATTs may be staged at crew bed-down locations with AEOTs or at fixed/mobile AE staging facilities. Teams positioned in staging facilities will augment patient care capability of that facility and will function under the administrative control of that facility. CCATTs are tasked by the AECT and may be deployed to augment nearly any AE UTC.

A2.1.3. Expeditionary AE Coordination Team (EACT). EACTs provide rapid response, man-portable AE coordination support for emergent/low intensity situations. They provide operational, clinical, and limited communication links necessary to prepare patients for flight and initiate fixed-wing evacuation of casualties. EACTs support SOF and small, portable, expeditionary aeromedical rapid response (SPEARR) teams and other expeditionary Service and civilian elements to meet patient evacuation requirements.

A2.1.4. Expeditionary AE Crewmember Support (EACS). The EACS provides personnel for emergent AE crew capability. It enhances operational support and provides minimal crew management functions. When combined with the EACT, it can provide minimal/intermittent staging capability. It is the ideal UTC to support EMEDS Basic. It interfaces with fixed- and rotary-wing aircraft and deploys with one pallet, or two pallets if the optional vehicle is deployed, to support patient or equipment movement.

A2.1.5. Expeditionary AE Staging Team (EAST). EASTs provide the initial capability to receive patients and administrative and supportive patient care on ground and in flight. They generally deploy as a follow-on staging capability to the EACT/EACS. When combined with these two UTCs, they can provide short-term 24-hour staging capability for up to 10 patients at any one time.

A2.1.6. Mobile Aeromedical Staging Facility (MASF)–25. The MASF-25 package increases patient staging capability to 25 patients at one time. It must be deployed in conjunction with, or as follow on to, the EACT/EACS/EAST UTCs. It deploys with AE

crew capability. Degradation of staging capability will occur if personnel are performing crew duties. It deploys with organic communications, enhanced power generation, and transportation capability.

A2.1.7. MASF–50. The MASF-50 package increases patient staging capability to 50 patients at one time. It must be deployed in conjunction with or as follow on to the MASF-25 package.

A2.1.8. 50-Bed Aeromedical Staging Facility (ASF) Initial Element. The 50-bed ASF is the basic component of the deployed aeromedical staging mission. It is a fixed patient care facility located at an established airhead and is usually placed at intertheater/intratheater hubs and collocated with an AEOT. It supports transient patients within the AE system who are required to wait extended periods of time for fixed-wing movement. It provides 24-hour operations with a patient capacity up to 50 at any given time.

A2.1.9. 25-Bed ASF Augmentation Package 1. The 25-bed ASF augmentation capability supports the 50-bed ASF initial element. It augments and provides additional support in mental health, nutritional medicine, and pharmacy.

A2.1.10. 25- Bed ASF Manpower Augmentation Package 2. This is a manpower augmentation expansion package designed to be added after expansion to 75 beds with the initial two increments of the ASF and then it alternates with the first 25-bed augmentation package as requirements build. It provides supportive and emergency medical care for patients transiting the AE system. It coordinates and communicates with medical and AE elements to facilitate patient care and movement. It provides/coordinates ground transport and ensures patients are medically/administratively prepared for flight. This UTC may only be tasked in conjunction with the initial two increments of the ASF.

A2.2. Command and Control UTCs.

A2.2.1. AE Command Element (AECE). The AECE advises supported commanders or appropriate personnel regarding AE CONOPs, capabilities, and requirements. It provides procedural, technical guidance, and management and oversight for assigned, attached, and transiting AE activities. It coordinates all logistical and personnel support for subordinate elements. Normally, it deploys under an expeditionary mobility wing to provide administrative command for wing AE units. It can serve as the AE advanced echelon (ADVON) team, when required, to arrange support requirements for follow-on AE forces. Depending on the size of the operation, an AE Command Augmentation Team (AECAT) can be deployed simultaneously or as a follow on UTC.

A2.2.2. AE Command Augmentation Team (AECAT). The AECAT augments any ground UTC, such as the AECE, to enhance its capability as the theater matures or command or operations requirements increase. They provide personnel to perform activities such as launch and recovery, crew management, and equipment management support for steady state, AEF, or small-scale contingency (SSC) operations. They provide the capability to enhance communications or to provide administrative support, personnel management, and procedural/technical guidance as required.

A2.2.3. AE Control Team (AECT). Located within the AMD of the aerospace operations center (AOC), this team is responsible for operational planning, scheduling, and execution of scheduled and unscheduled AE missions through the appropriate AE elements. The AECT analyzes patient requirements, coordinates airlift to meet AE requirements, tasks the appropriate AE elements, and notifies the PMRC when mission taskings are scheduled in order to maintain full patient in-transit visibility. The AECT also monitors execution of AE missions and coordinates/communicates with theater planning cells and AE command elements as necessary. The AECT advises the Director of Mobility Forces (DIRMOBFOR) and liaisons with Joint Task Force/Component Surgeons on AE issues. The AECT must be able to establish communication links with other AE components and PMRC.

A2.2.4. AE Plans and Strategy Team (AEPST). Collocated with the Combat Plans and/or Strategy Division within the JAOC, and reporting to the Director, JAOC. Develops plans and strategies and determines number and location of AE assets needed to support operational requirements. Provides this information to the AECT through the Director, to the Joint Forces Air Component Commander (JFACC), for execution by the DIRMOBFOR. The AEPST communicates and coordinates with other AE components as necessary, but it does not exert any direct command and control functions.

A2.3. Support UTCs.

A2.3.1. AE Administrative Support Team (AAST). The AAST expands operational and administrative capability to meet increasing mission requirements for any ground UTC.

A2.3.2. Expeditionary Liaison Team (ELT). The ELT provides AE liaison support between the user and the AE system for emergent and/or low intensity contingencies, SSCs and early stages of MTWs situations. They provide immediate, short duration liaison support with limited, man-portable communication capability. They provide operational, clinical, and communication links necessary to prepare patients for flight and initiate fixed-wing evacuation of casualties.

A2.3.3. AE Liaison Team (AELT). The AELT provides enhanced AE liaison support between the user and the AE system for SSCs and MTW situations where the expected casualty rate would require long-term, 24-hour operations. They deploy with an organic transportation and equipment package. They provide low intensity, long duration support with fully capable multiple communication capability to meet any possible requirement. Normally, they deploy to augment the Expeditionary Liaison Team (ELT) and when combined with the ELT, they support intense MTW situations and sustained surge operations.

A2.3.4. AE Support Cell (AESC). It provides medical materiel, communications, and aerospace ground equipment (AGE) maintenance, and ground transportation management and maintenance support to AE UTCs. The cell is staged at key locations to support multiple AE elements as needed.

A2.3.5. AE Crew Management Cell (AECMC). The AECMC performs AE crew management functions for locations with more than 5 assigned or attached and for transiting AE crews. A single CMC can manage up to 10 crews at any given location and is also responsible for management of in-flight kits. Duties involve scheduling and alerting crews; coordinating life support, food service, transportation, lodging, launch and recovery operations; and administrative duties such as mission paperwork preparation.

A2.3.6. AE Patient Movement Items (PMI) Medical Logistics Team [PMI-L]. This team provides manpower for operational management of PMI centers and/or cells. Their duties consist of storage, reception, inventory control, issue, palletizing, shipping, and identification of requirements and updating the supporting management information system. They liaison with AE and user Service personnel regarding PMI demands. They are collocated with the AEOT or key locations to facilitate PMI movement.

A2.3.7. AE PMI Biomedical Equipment Repair Team [PMI-B]. This team provides regional maintenance and repair capability for equipment in PMI centers and/or cells. Their duties involve scheduling and completing scheduled preventative maintenance and calibration, repair and maintenance services, and updating the PMI information system.

A2.4. Force Packages.

A2.4.1. When certain AE UTCs are combined, an enhanced or specific capability can be achieved. The following are combinations of UTCs designed to create force packages that can be employed to meet mission requirements.

A2.4.2. AE Operations Team (AEOT) Force Package. (Includes AE Command Augmentation Team, AECMs, and AE Administrative Support Team.) This package provides operational and mission management; crew management for assigned, attached, and transiting AE crews; and in-flight medical equipment management to include supplies, medications, and sufficient liquid oxygen. They direct launch and recovery activities and supervise ground handling and on/offload of patients. They ensure appropriate aircraft configuration and equipment availability. Their duties also involve scheduling and alerting crews; coordinating life support, food service, transportation, and lodging; and administrative duties, such as mission paperwork preparation. They support all aircraft transporting patients, including CRAF. The AEOT can be deployed incrementally, but a complete AEOT force package consists of an AE command augmentation team, AE crew, two crew management cells, and an AE administrative support team. The AECAT is the initial UTC to deploy from this force package and subsequent elements are added as mission requirements dictate.

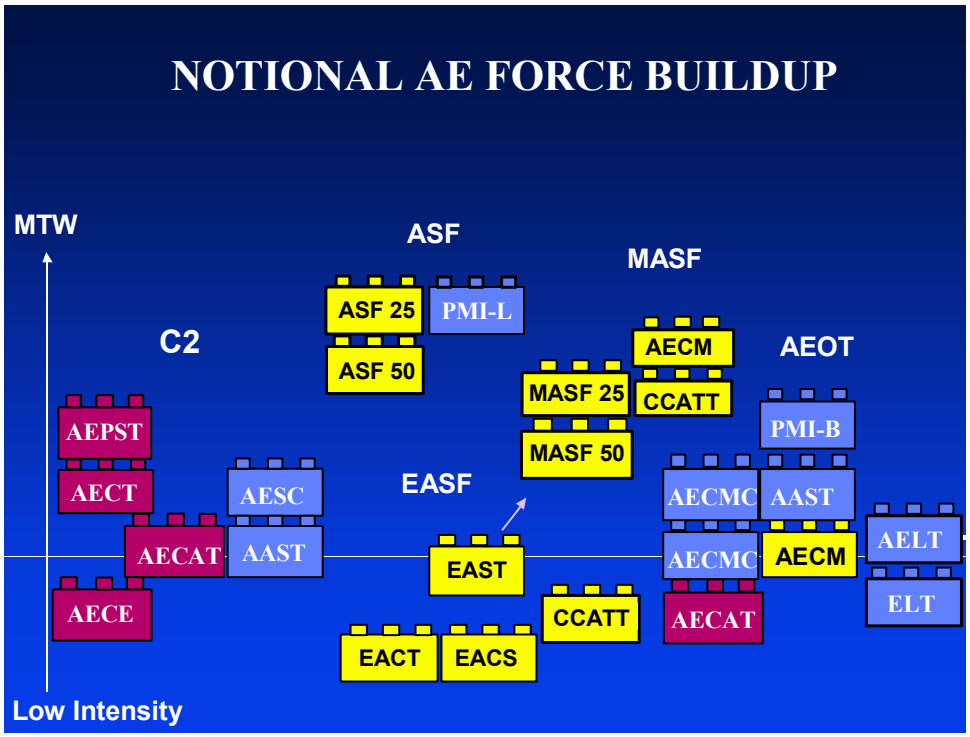
A2.4.3. AE Liaison Team Force Package. (Includes Expeditionary Liaison Team and AE Liaison Team.) When fully employed, this package provides high intensity, long duration support with fully capable multiple communication capability to meet any possible requirement. They provide continuous 24-hour operations, communications, and flight clinical coordination interface with the user Service/customer. UTCs can be employed incrementally or in conjunction to meet mission requirements.

A2.4.4. Expeditionary Aeromedical Staging Facility (EASF) Force Package. (Includes Expeditionary AE Coordination Team, Expeditionary AE Crewmember Support, and Expeditionary AE Staging Team.) When fully deployed, this package provides 24-hour, short-term aeromedical staging capability for 10 patients at any one time. Extended or anticipated operations at surge capability beyond 72 hours may require augmentation by additional MASF UTCs.

A2.4.5. Mobile Aeromedical Staging Facility (MASF) Force Package. (Includes Expeditionary Aeromedical Staging Facility, MASF–25 Package and MASF–50 Package.) This package is designed to support MTW requirements. It provides the personnel for supportive patient care, patient staging, and emergent AE crew capability. It can be deployed incrementally or as a force package to meet mission requirements. It interfaces with fixed- and rotary-wing aircraft.

A2.4.6. Aeromedical Staging Facility (ASF) Force Package. (Includes 50-Bed ASF Initial Element and 25-Bed ASF Augmentation Package.) This package supports the deployed aeromedical staging mission at strategic-tactical interface points within a theater or area of operations, strategic hub, or CONUS interface point. It provides the personnel to support AE command, control, communications, patient care, patient staging, and system support. It can be employed incrementally or as a force package to meet mission requirements.

Figure A2.1 Notional Force Buildup With Modular AE UTCs .



A2.4.7. AE UTCs were developed based on the building block principle, which provides a great deal of flexibility to commanders and planners. Figure A2.1 demonstrates how the

modularized UTCs could be incrementally deployed as AE requirements increase during a force buildup for an operational requirement.